



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

GP 230#15
BM 7

37th re Application of: JOHNSON
Serial No. 08/133,986
Filed: October 12, 1993
Examiner : R. Bayerl

Group Art Unit: 2301
Due Date: July 6, 1994
Docket: 7709.18US03

Title : COMPUTER-ASSISTED PARTS SALES METHOD

7560 Allowed
093
5/19/94
Siles

The Commissioner of Patents and Trademarks
ATTN: Official Draftsman
Washington, D.C. 20231

Sir:

We are transmitting herewith the attached:

- ☒ Transmittal Sheet in duplicate containing certificate under 37 CFR 1.8.
☐ A verified statement to establish small entity status under 37 C.F.R. 1.9 and 1.27.
☐ A signed Combined Declaration and Power of Attorney.
☐ A Request for Extension of Time for _ months and fee of \$_.
☐ A check in the amount of \$_, for _.
☒ A return postcard.
☒ Other: Submission of Formal Drawings (1 page communication); 74 pages of formal drawings.
☐ Amendment ☐ No Additional fee is required ☐ The fee has been calculated as shown:

CLAIMS AS AMENDED

	(1) CLAIMS REMAINING AFTER AMENDMENT	# # # #	(2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(3) PRESENT EXTRA	SMALL ENTITY		or	OTHER	
					RATE	ADD'L FEE		RATE	ADD'L FEE
TOTAL CLAIMS		-	=		x 11 =	\$	or	x 22 =	\$
INDEPENDENT CLAIMS		-	3 =		x 37 =	\$	or	x 74 =	\$
() FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM					+115 =	\$	or	+ 230 =	\$
TOTAL					\$			\$	

Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. A duplicate copy of this sheet is enclosed.

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this Transmittal Letter and the paper, as described hereinabove, are being deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on this 23rd day of May, 1994.

MERCHANT, GOULD, SMITH, EDELL, WELTER & SCHMIDT
3100 Norwest Center, Minneapolis, MN 55402 (612-332-5300)

By: Lance L. Vietzke
Name: Lance L. Vietzke
Reg. No.: 36,708
LLV/mas



#15

BATCH NO. A55

PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: JOHNSON Examiner: R. Bayerl
Serial # : 08/133,986 Group Art Unit: 2301
Filed : October 12, 1993 Docket: 7709.18US03
Title : COMPUTER-ASSISTED PARTS SALES METHOD

SUBMISSION OF FORMAL DRAWINGS

The Commissioner of Patents
and Trademarks
Attn: Official Draftsman
Washington, D.C. 20231

Dear Sir:

Submitted herewith are 74 sheet(s) of Formal Drawings for completion of this application in response to the Notice of Allowance dated May 6, 1994.

Respectfully submitted,

5-23-94

Date

Lance L. Vietzke

Lance L. Vietzke
Reg. No.: 36,708

MERCHANT, GOULD, SMITH, EDELL,
WELTER & SCHMIDT, P.A.
3100 Norwest Center
90 South Seventh Street
Minneapolis, Minnesota 55402
(612) 332-5300

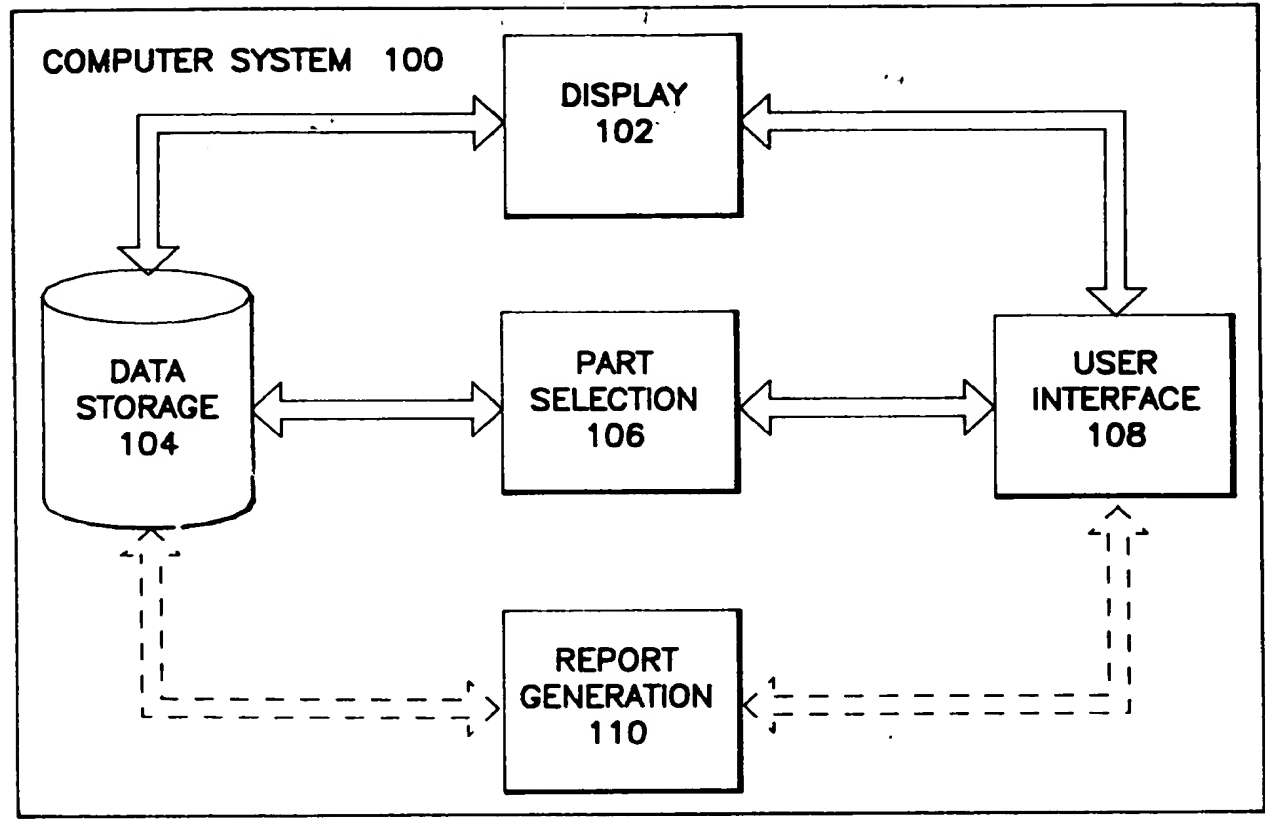
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231

on 5-23-94
(Date of Deposit)

Lance L. Vietzke
Lance L. Vietzke

5367627

FIG. 1



1
395 161
BY
DATE

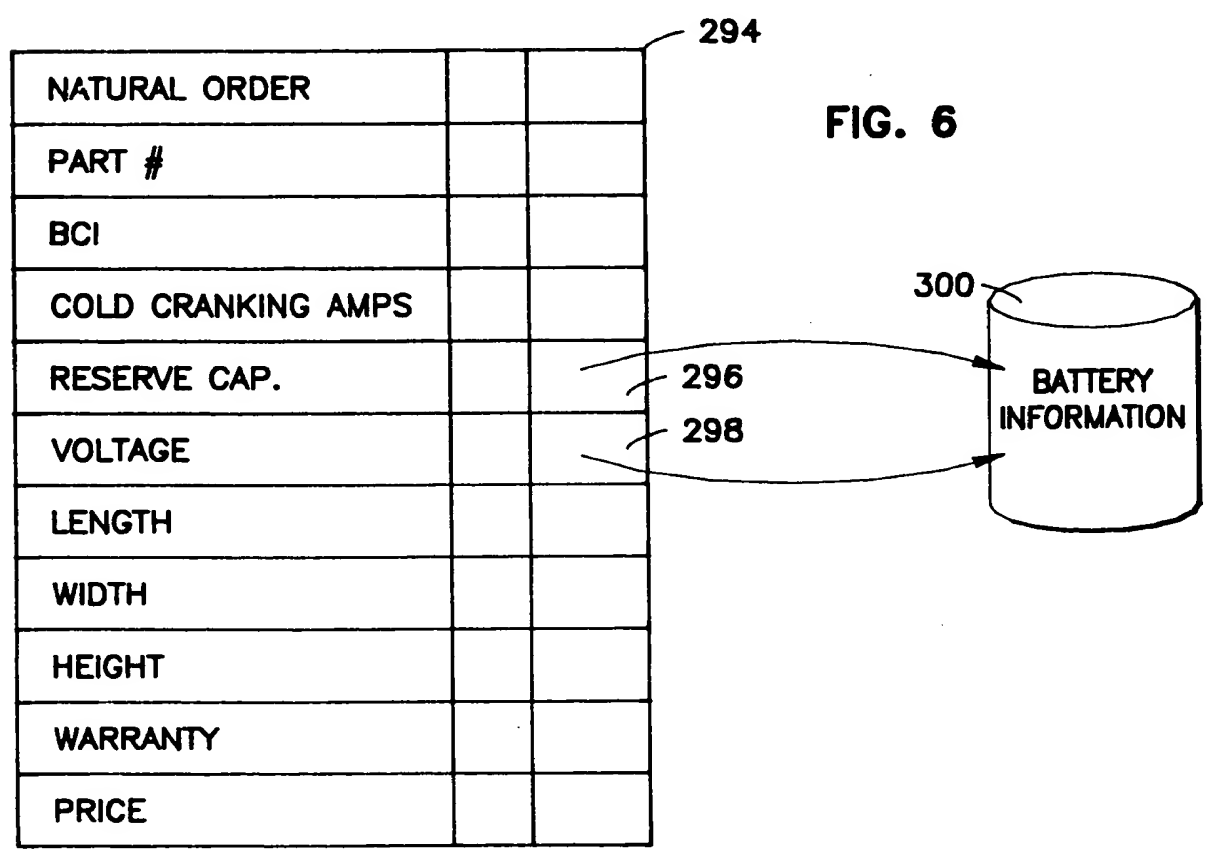


FIG. 1A

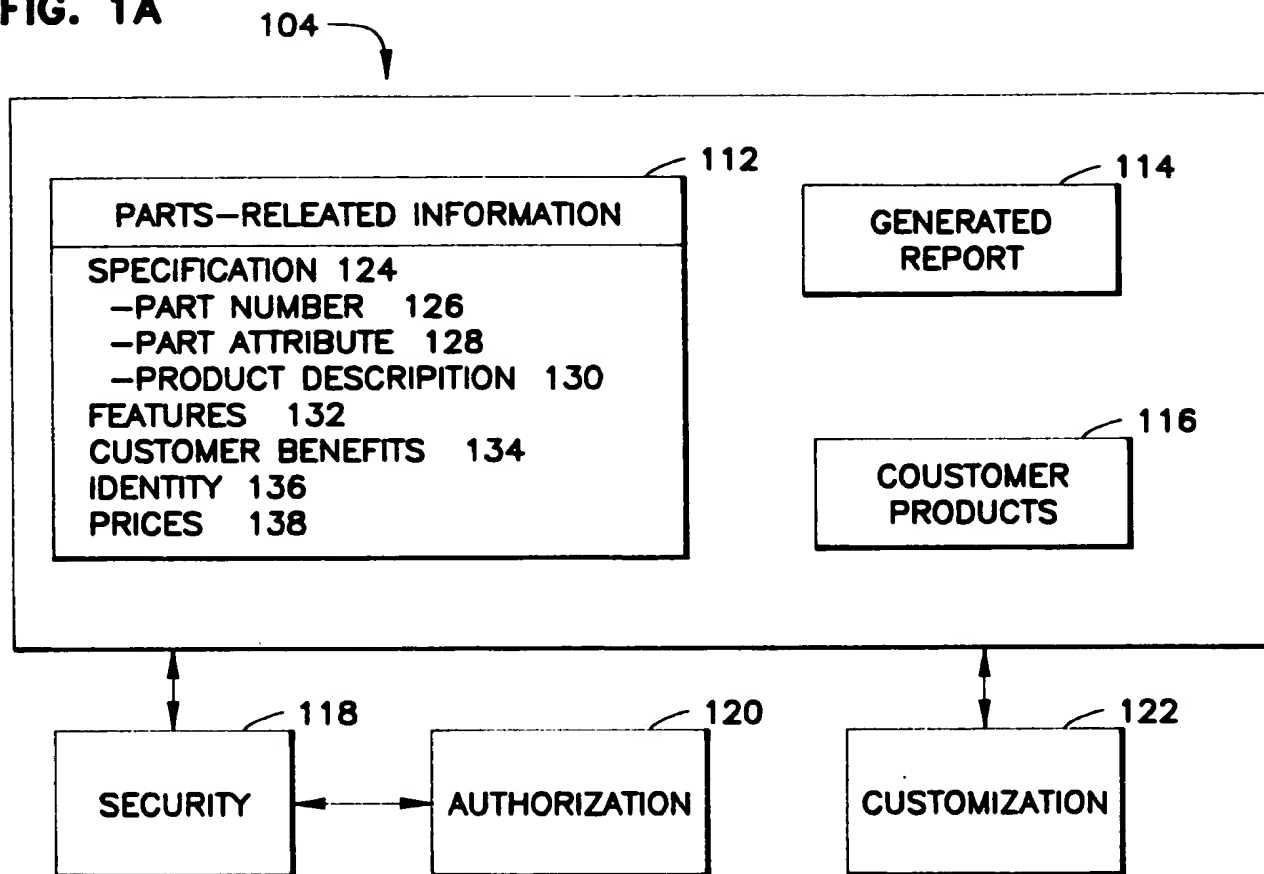


FIG. 1B

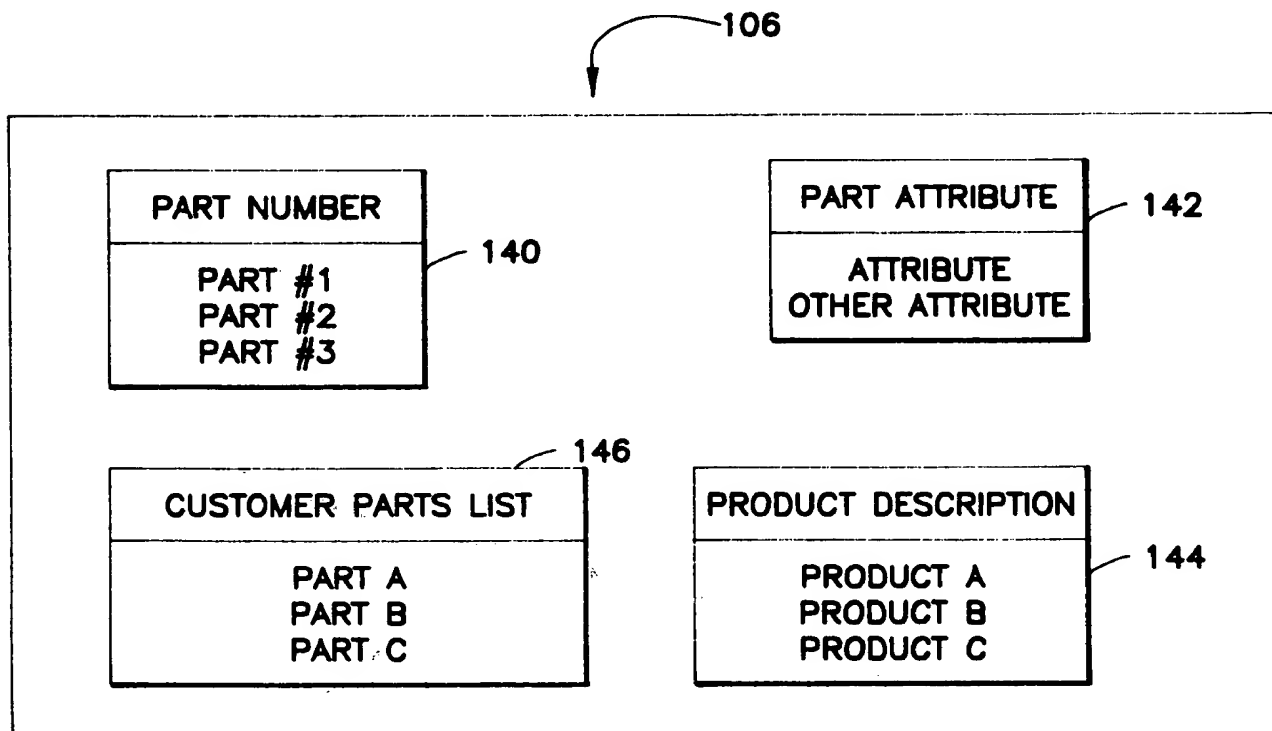


FIG. 1C



SEQUENTIAL DISPLAY GENERATION	148
- COLOR SEQUENCE GENERATION	150
- CUSTOMIZED TEXT DISPLAY GENERATION	152
- CUSTOMIZED SEQUENCE GENERATION	154
ANIMATED DEMONSTRATION GENERATION	156

FIG. 1D



DEALER PERSONALIZATION	157
CUSTOMER PERSONALIZATION	158
RETRIEVE STORED REPORT	160
UPDATE REPORT	162
PRINTED GRAPHICS GENERATION	164
PRINTED COLOR GENERATION	166

FIG. 2

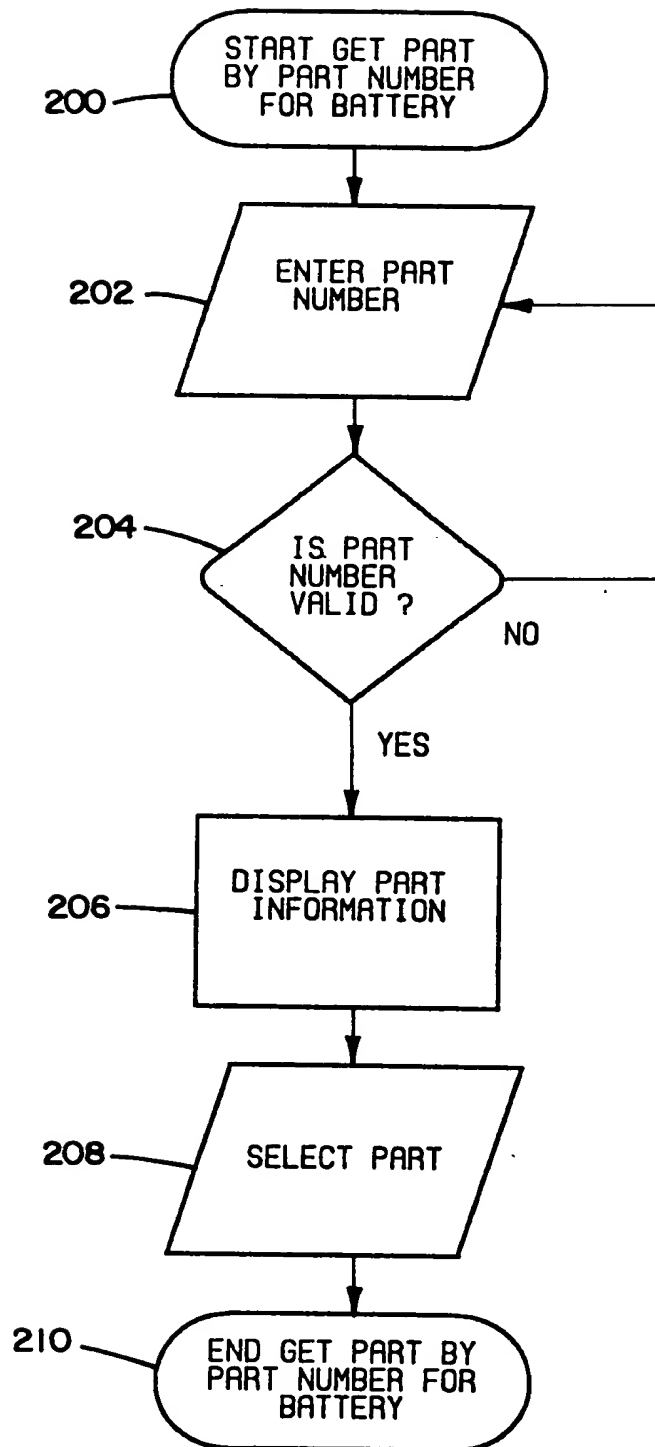


FIG. 3A
© 1989 CLEAR WITH COMPUTERS, INC.

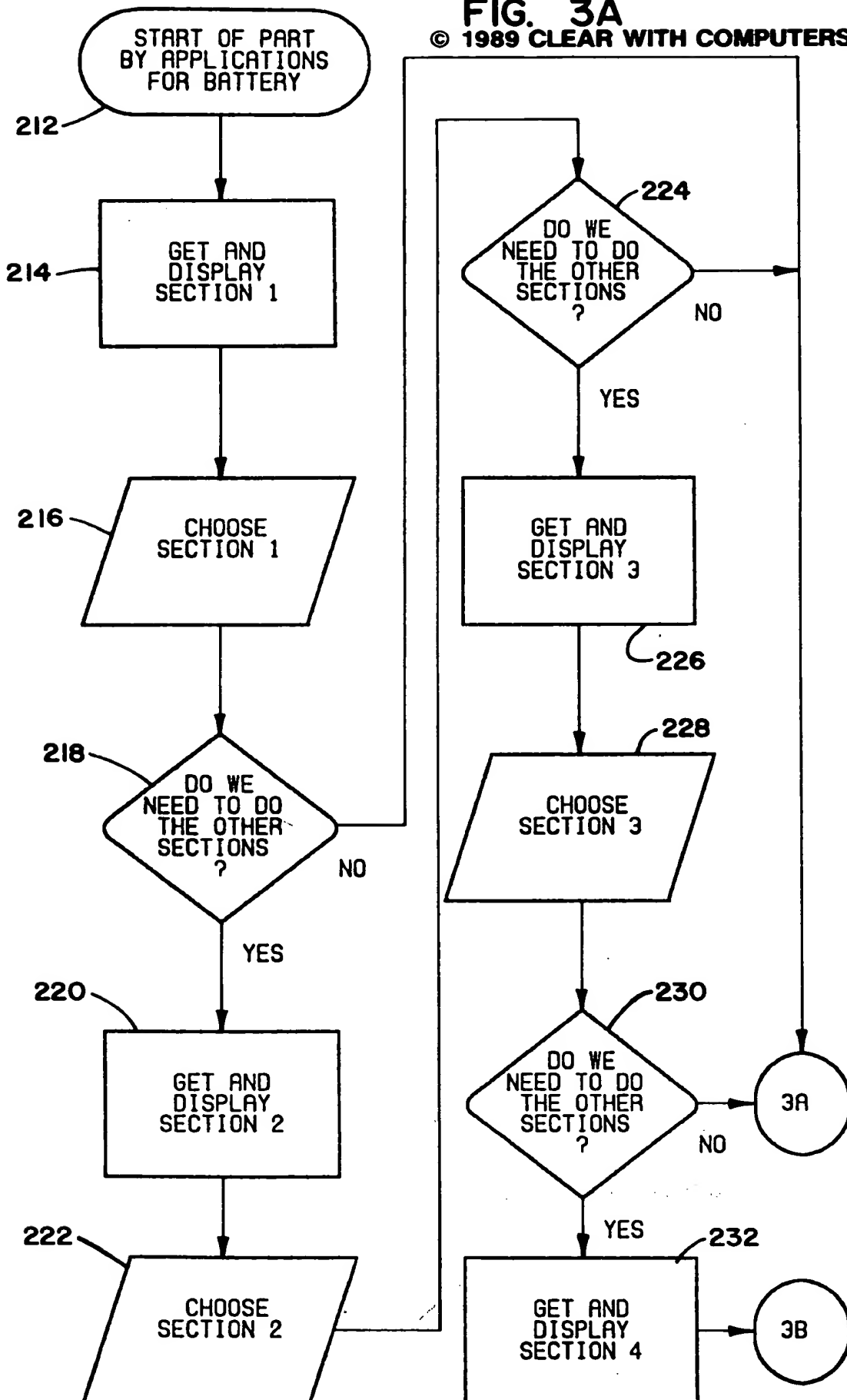


FIG. 3B

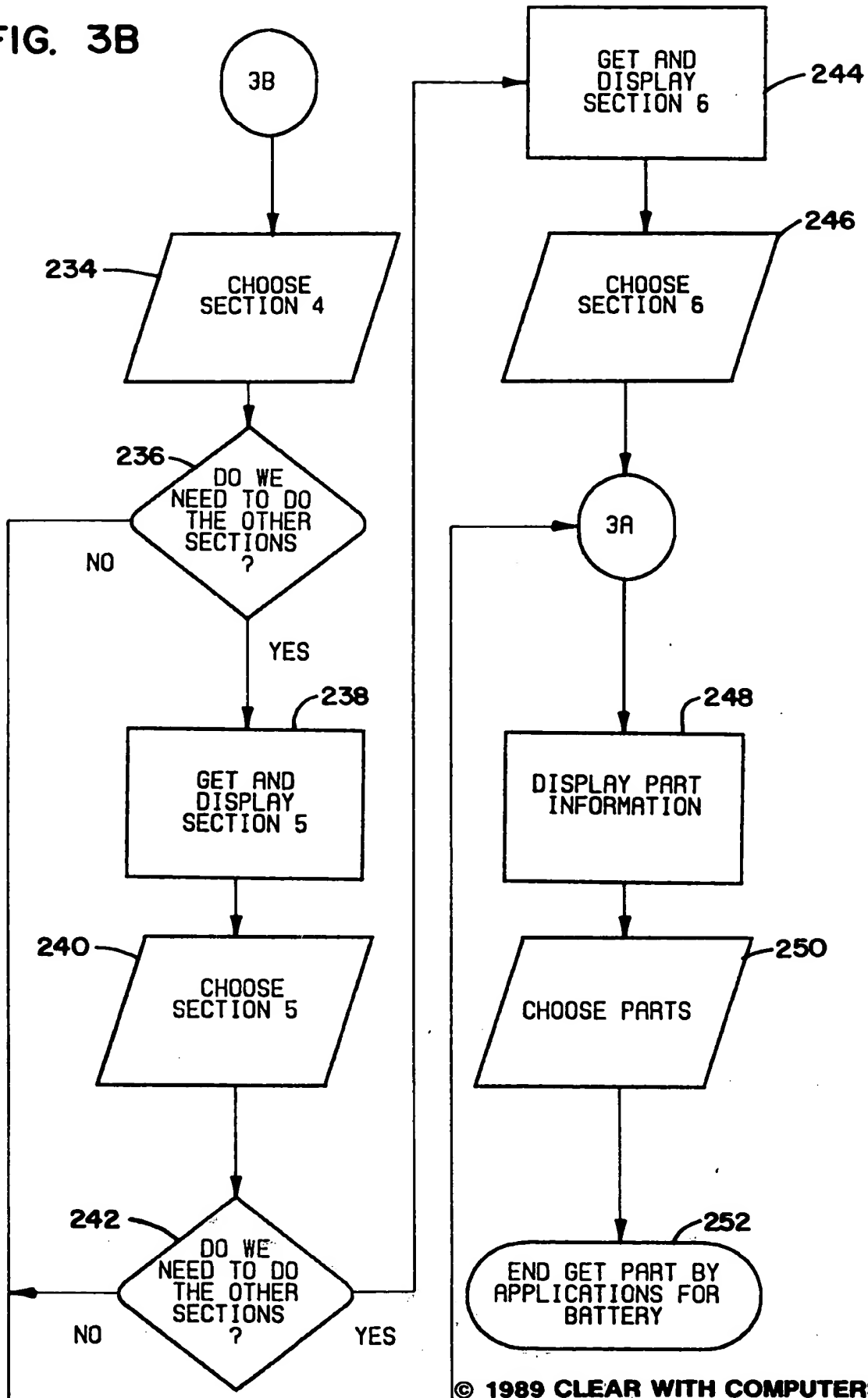


FIG. 4

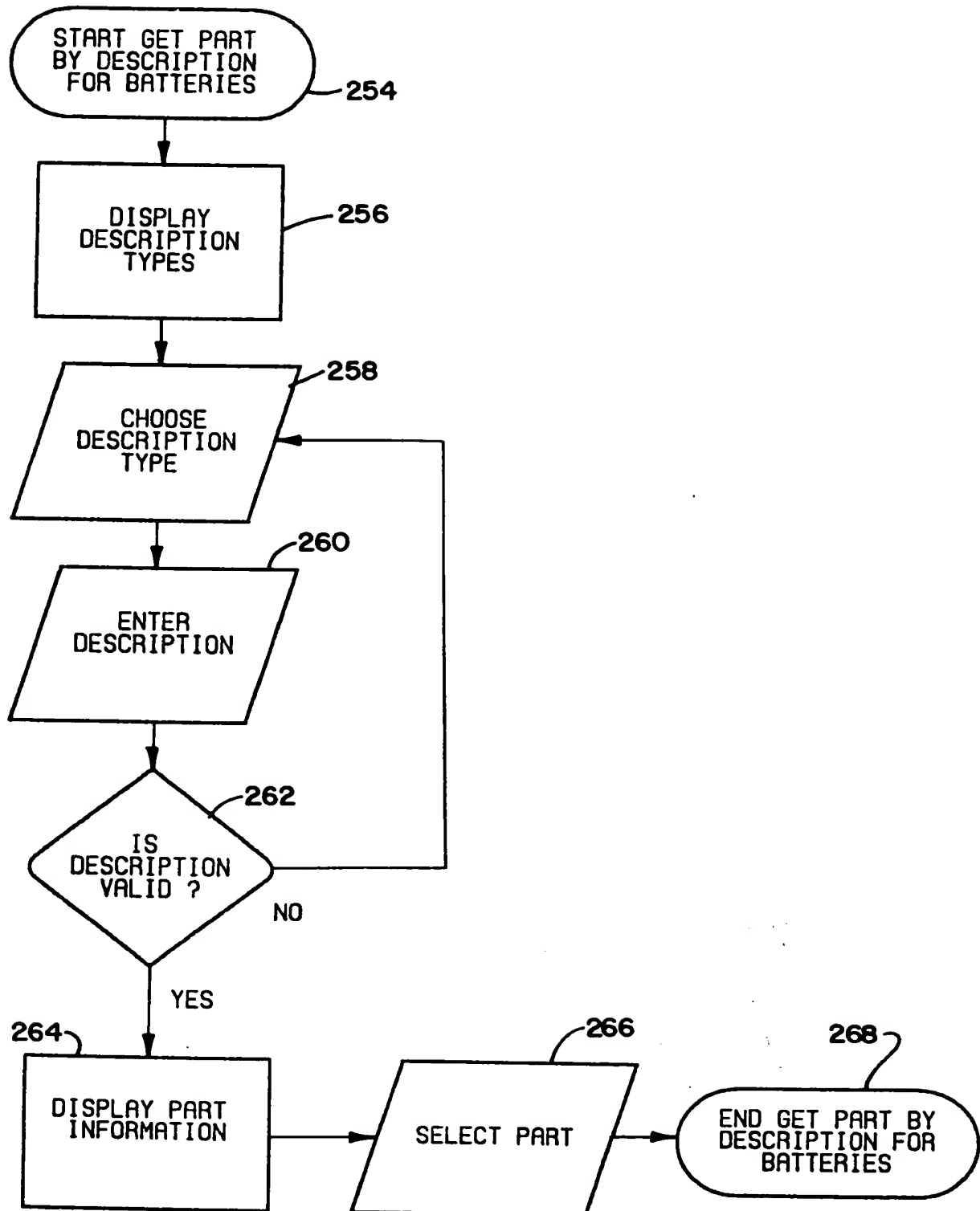


FIG. 5

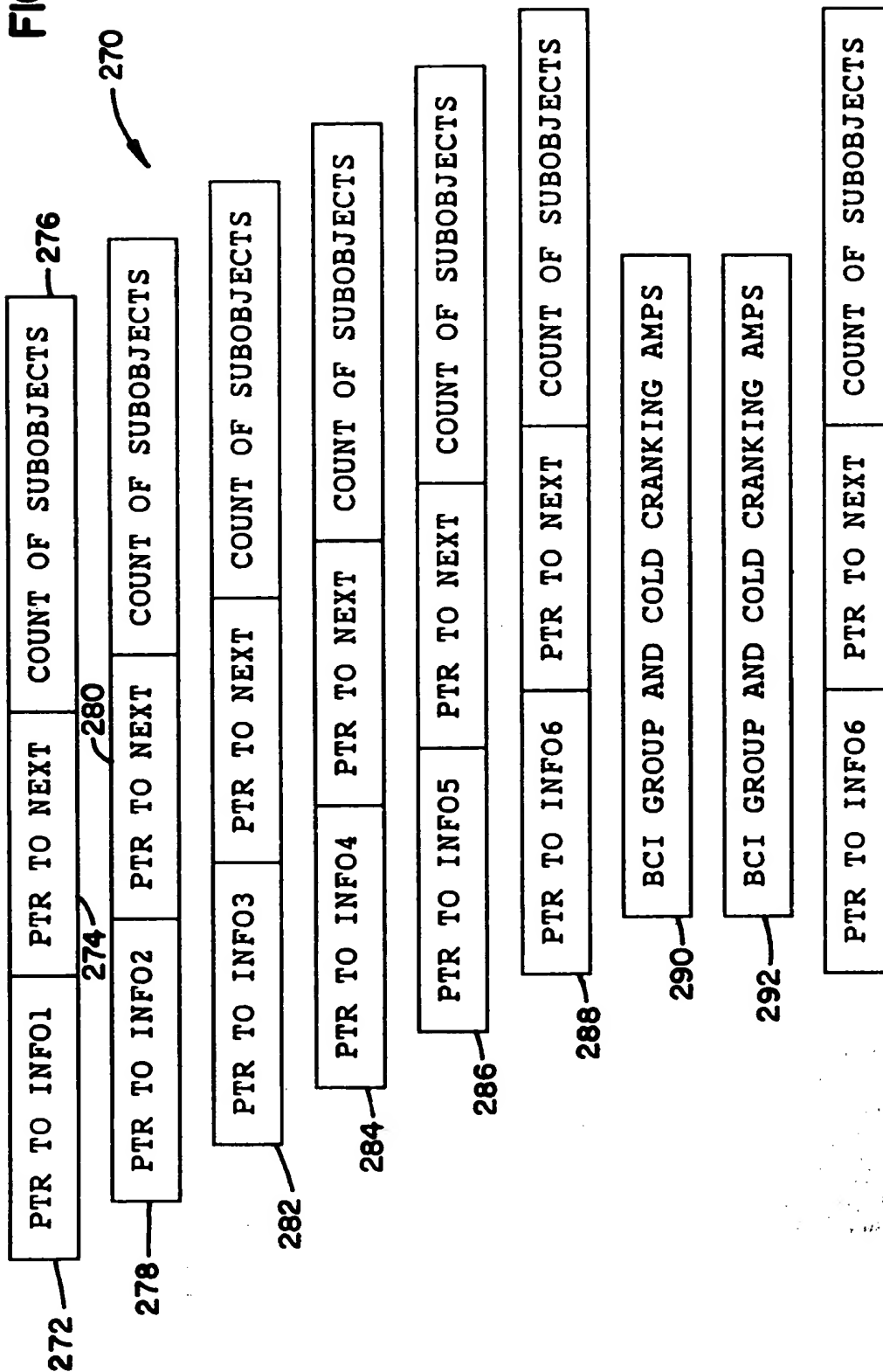


FIG. 7

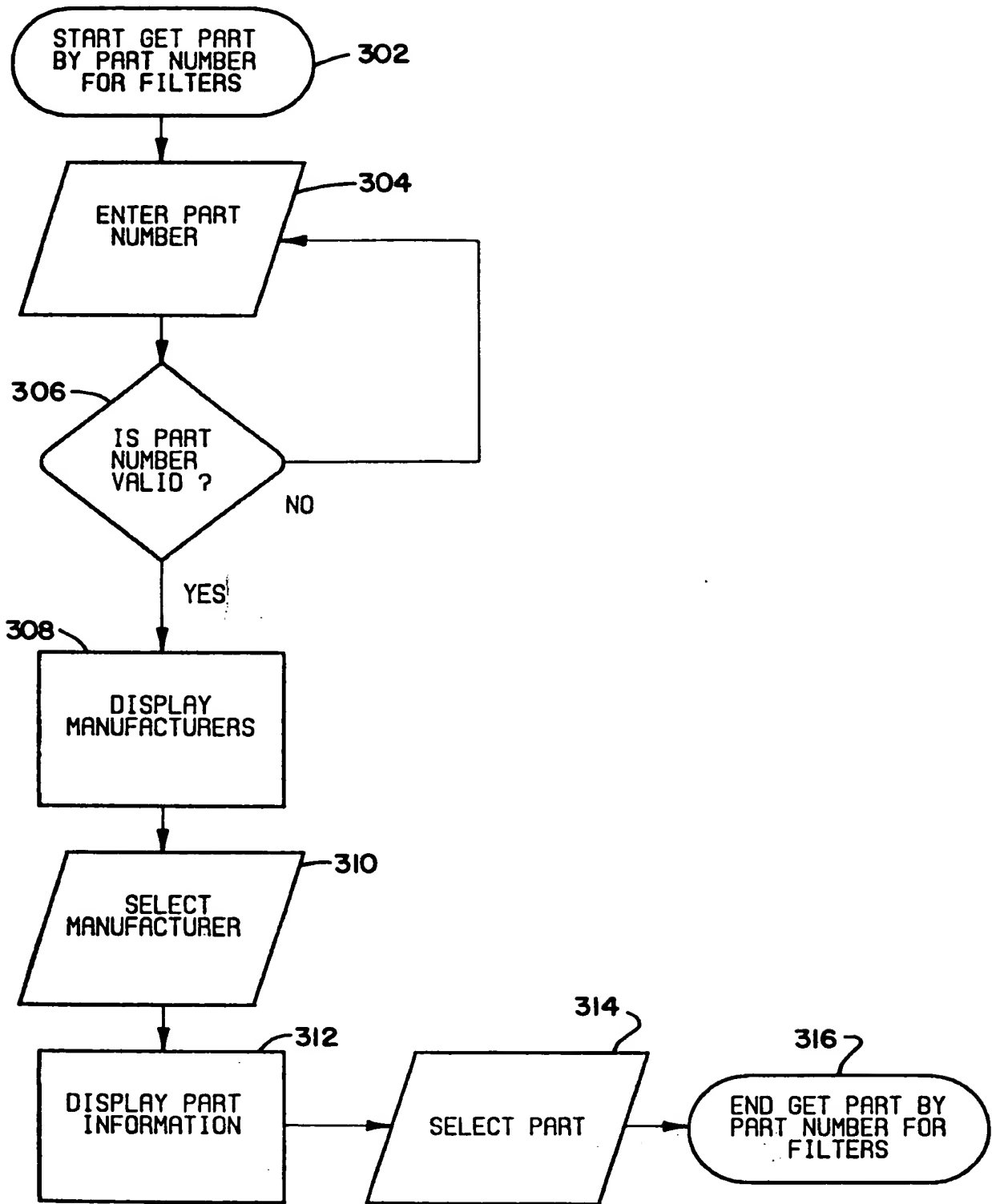
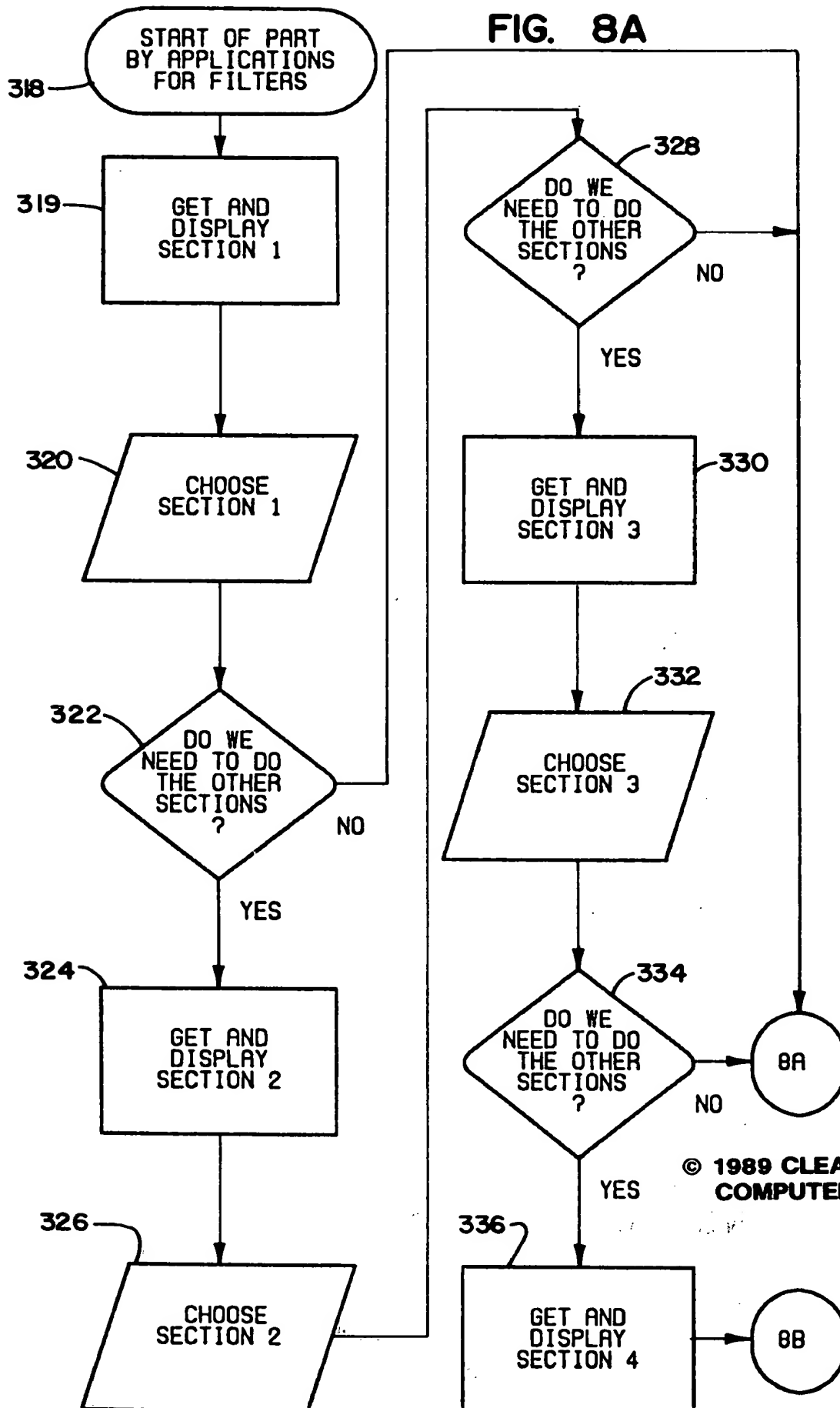


FIG. 8A



© 1989 CLEAR WITH
COMPUTERS, INC.

FIG. 8B

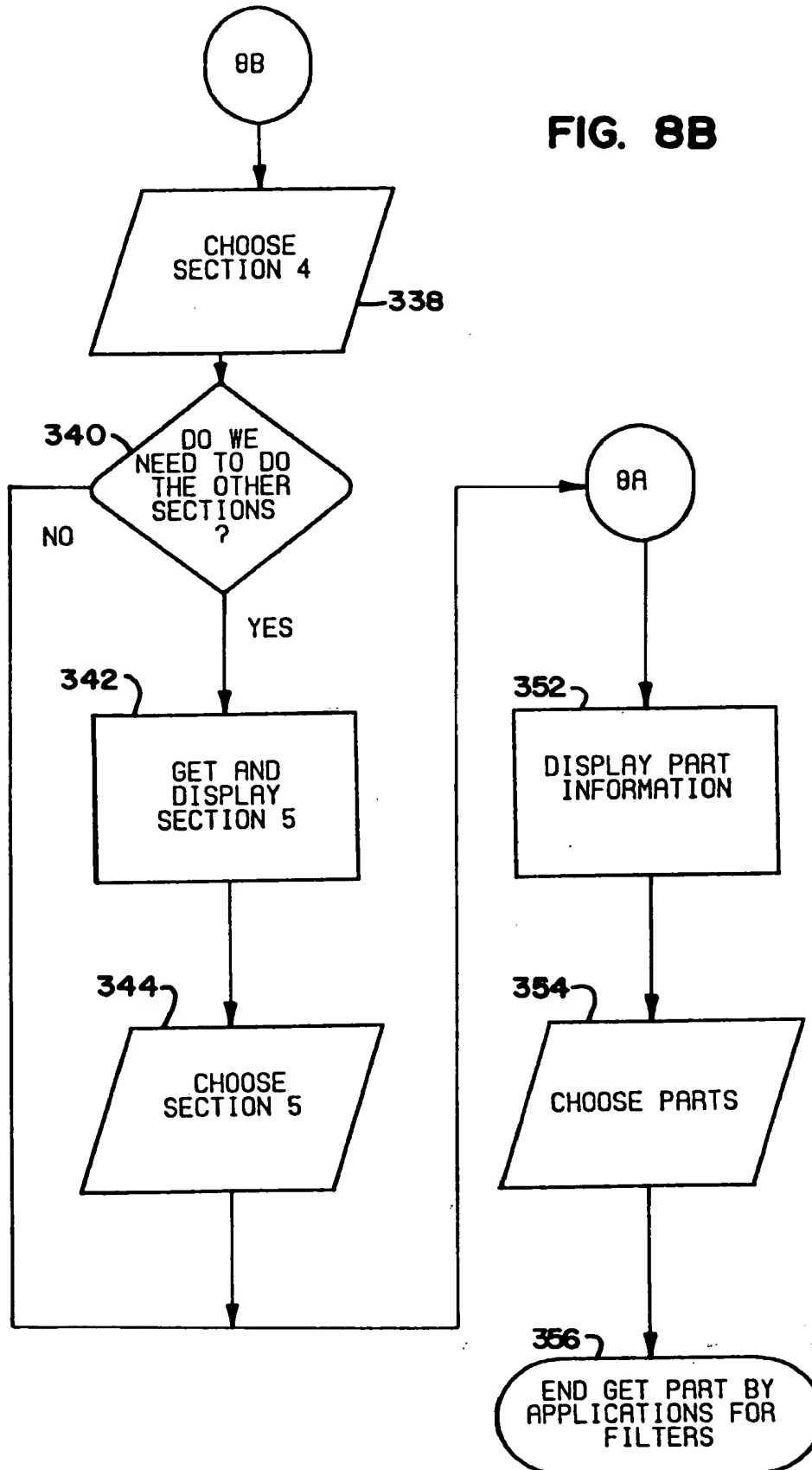


FIG. 9

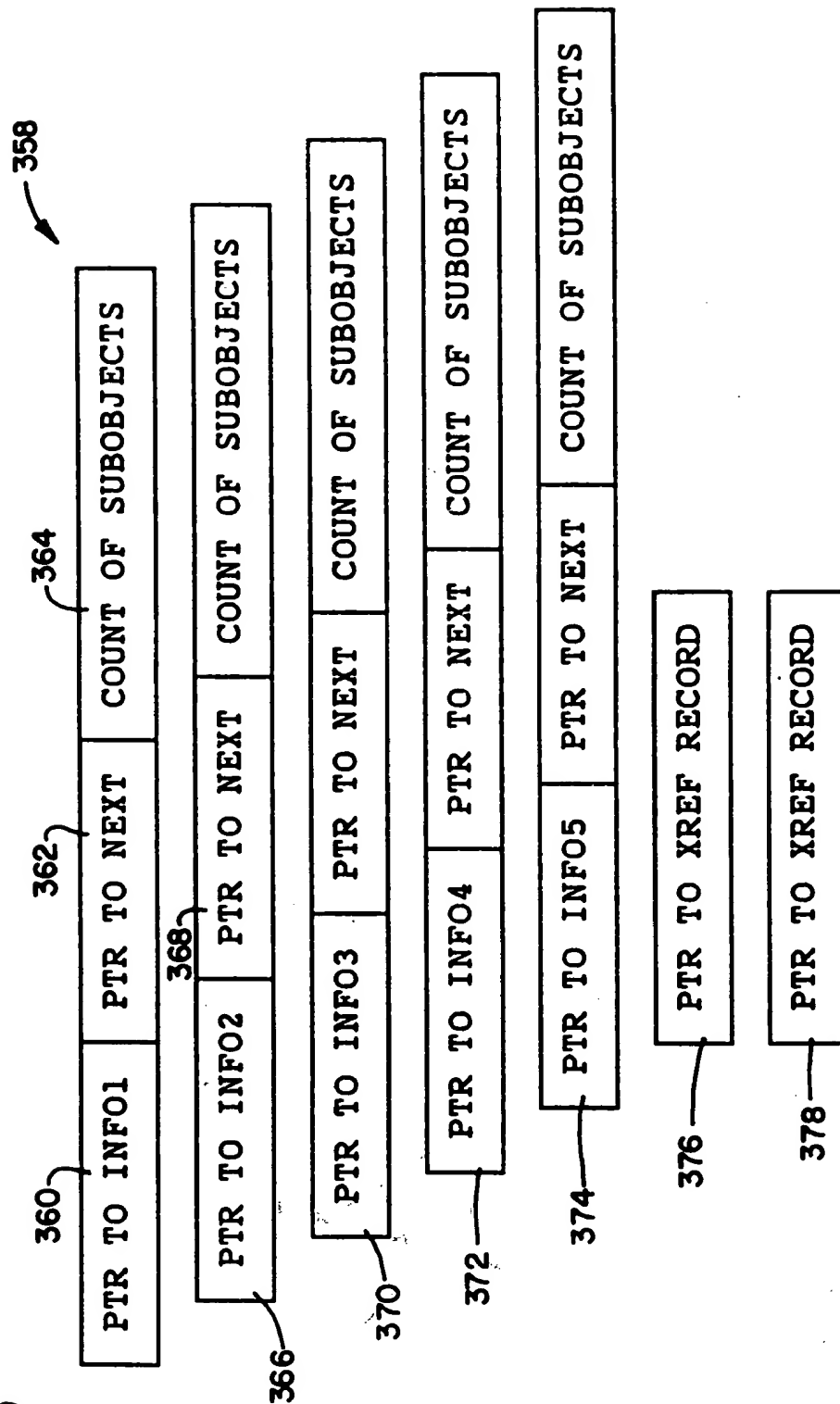


FIG. 10

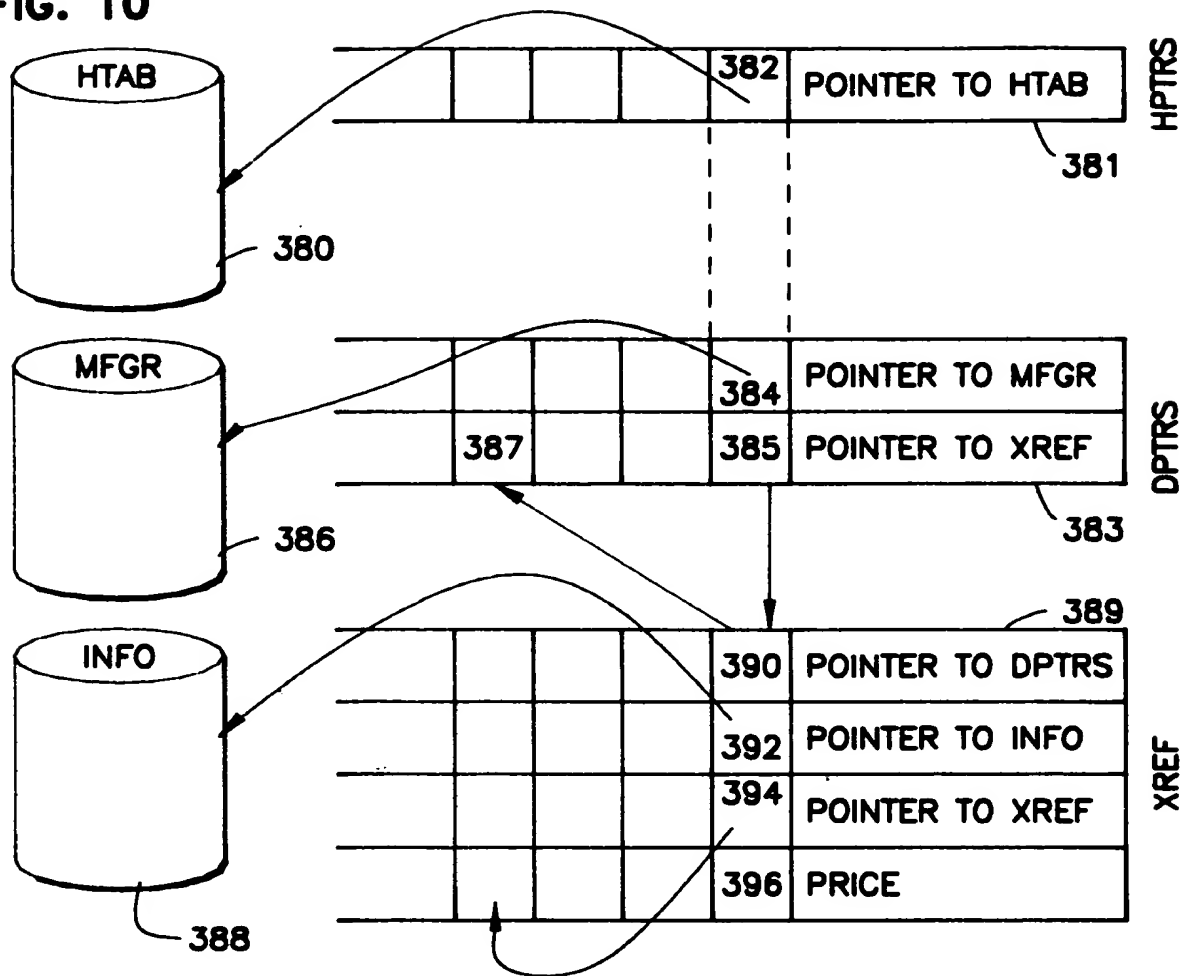


FIG. 14

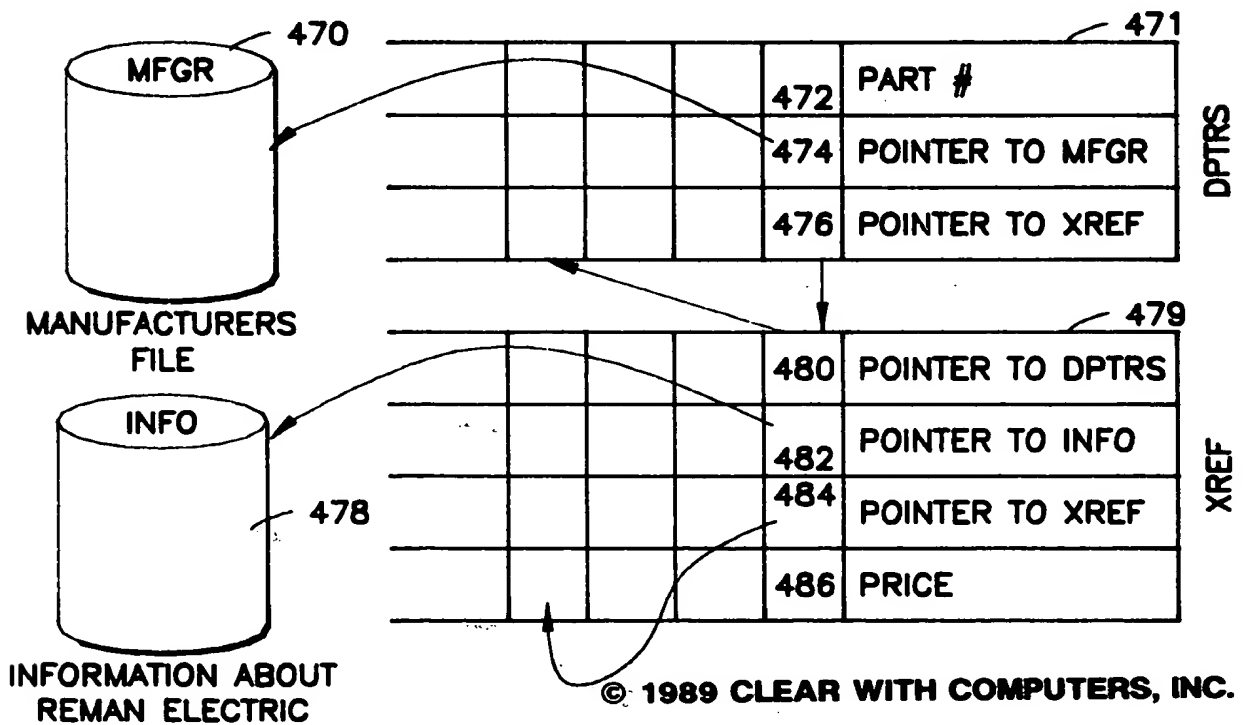


FIG. 11

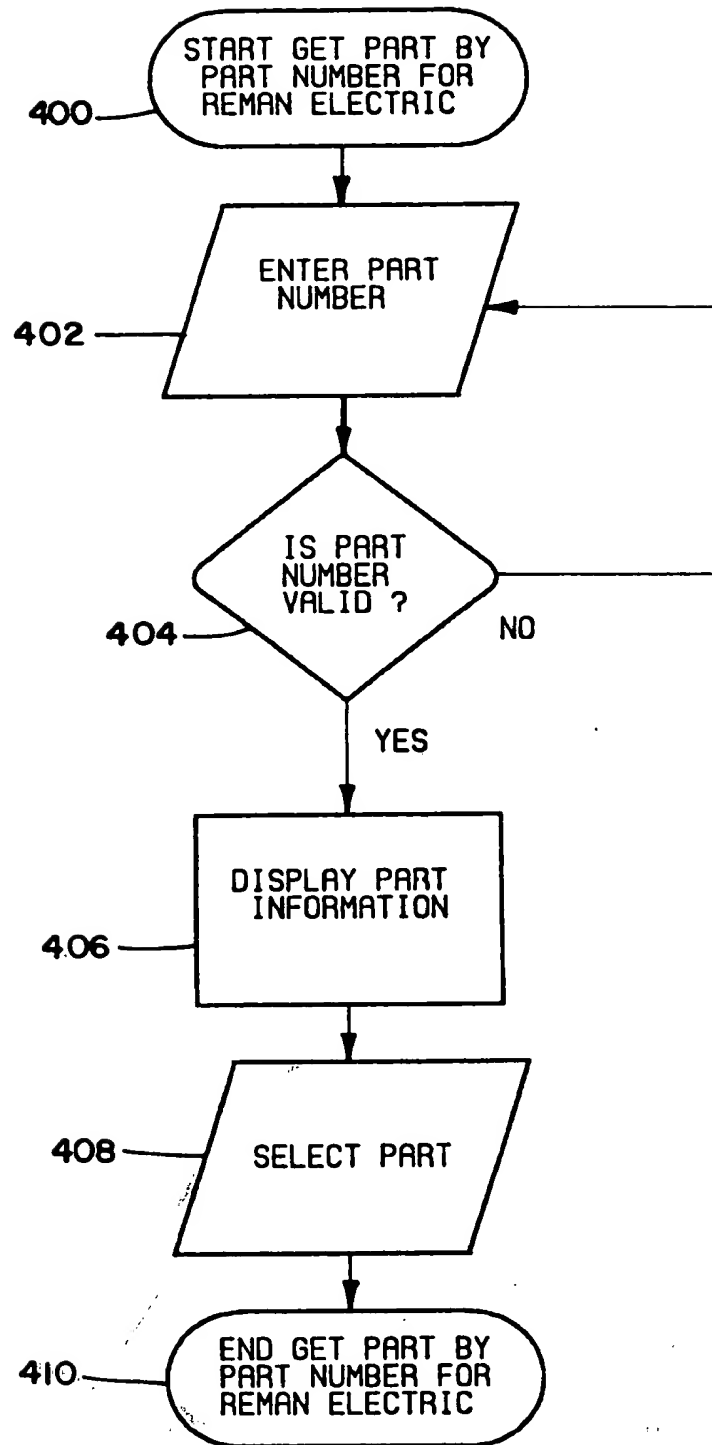
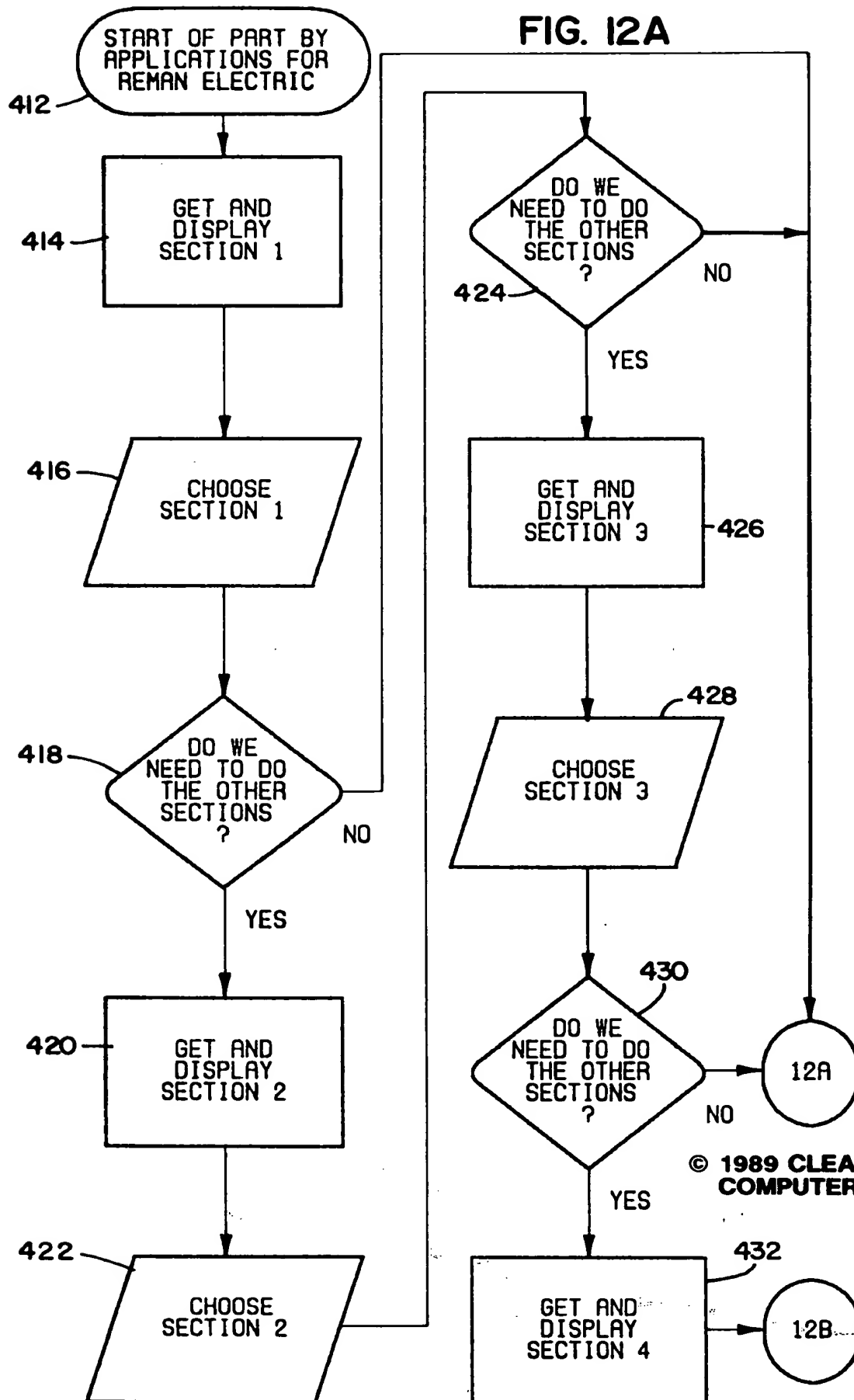


FIG. 12A



© 1989 CLEAR WITH COMPUTERS, INC.

FIG. 12B

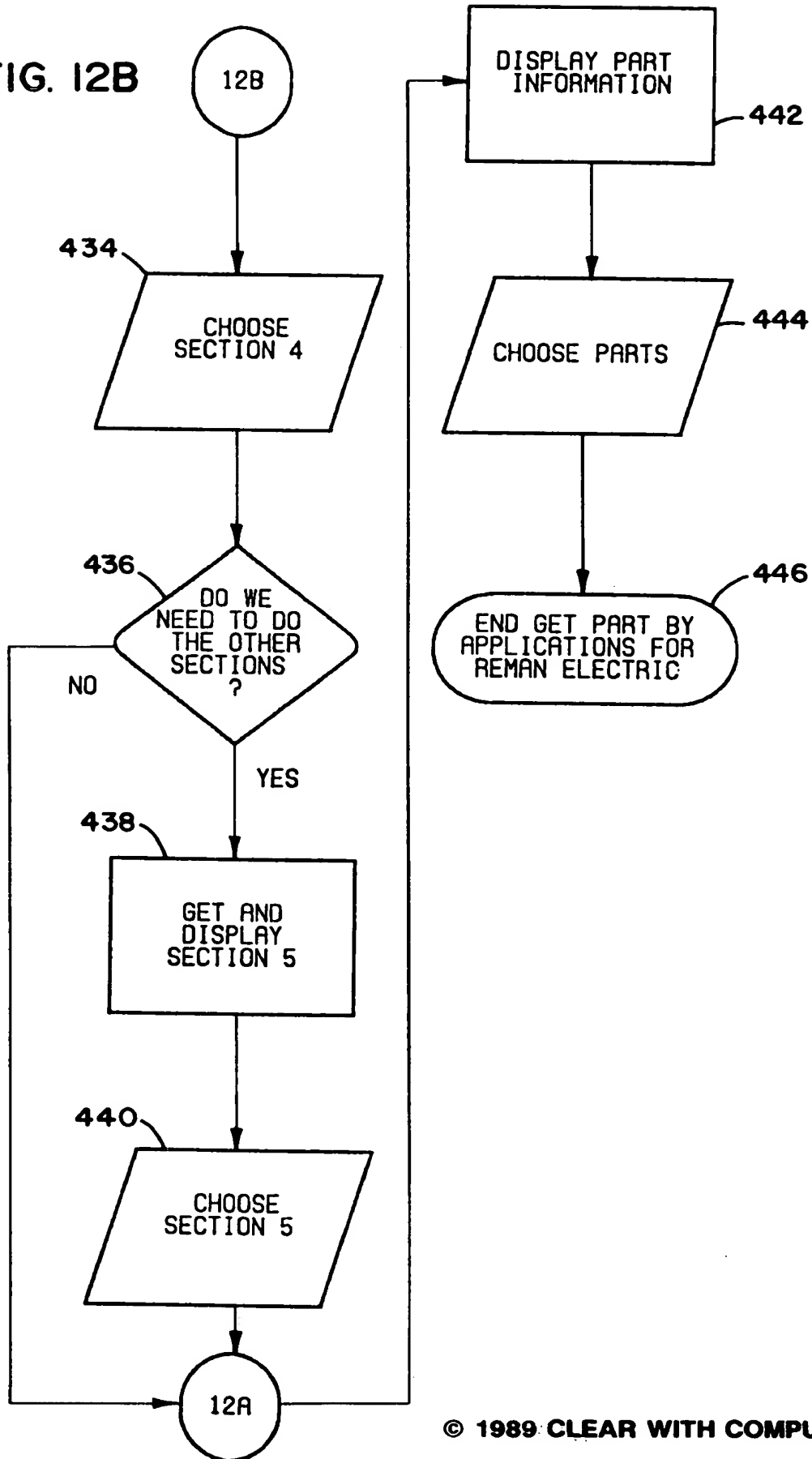


FIG. 13

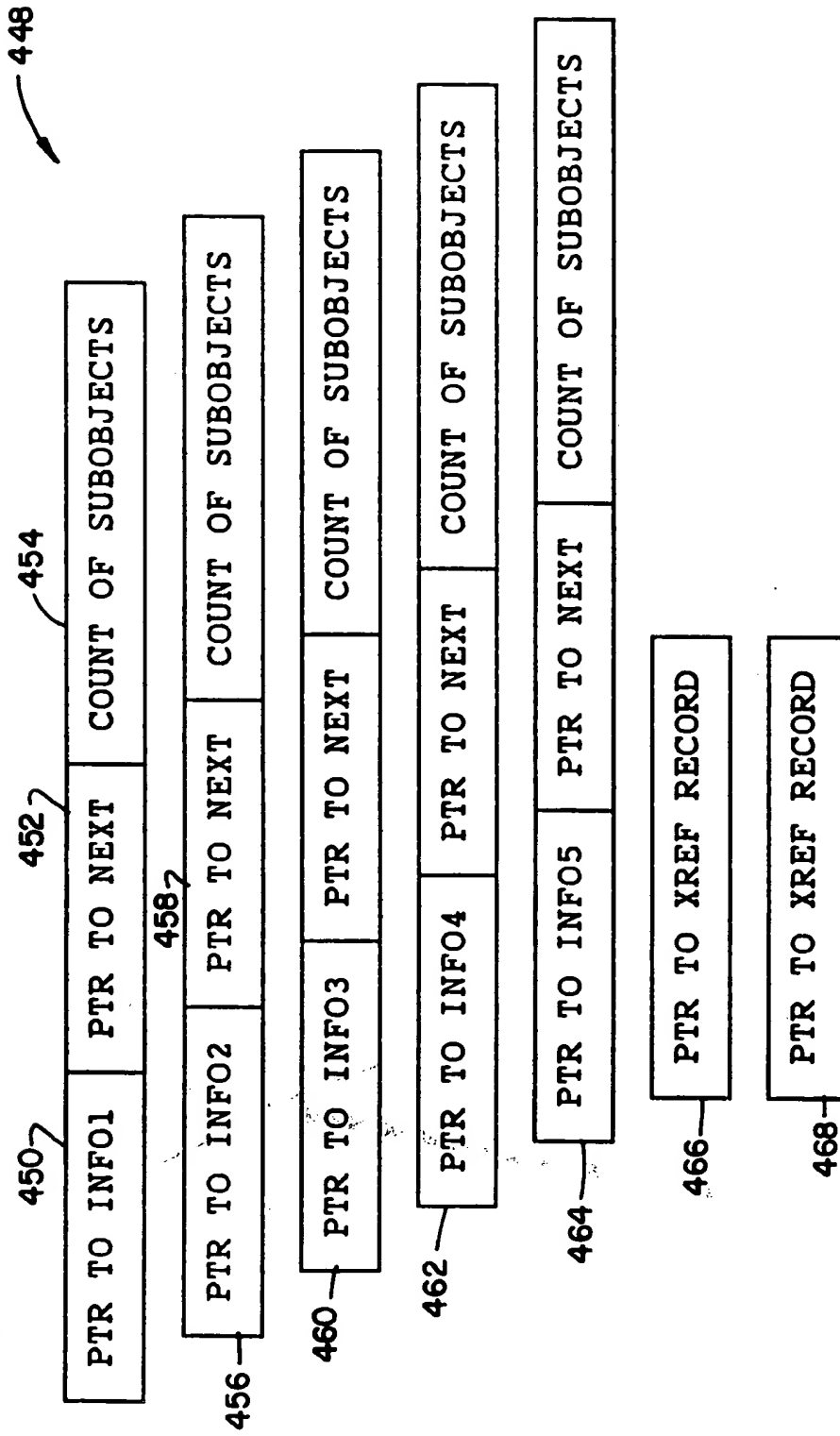
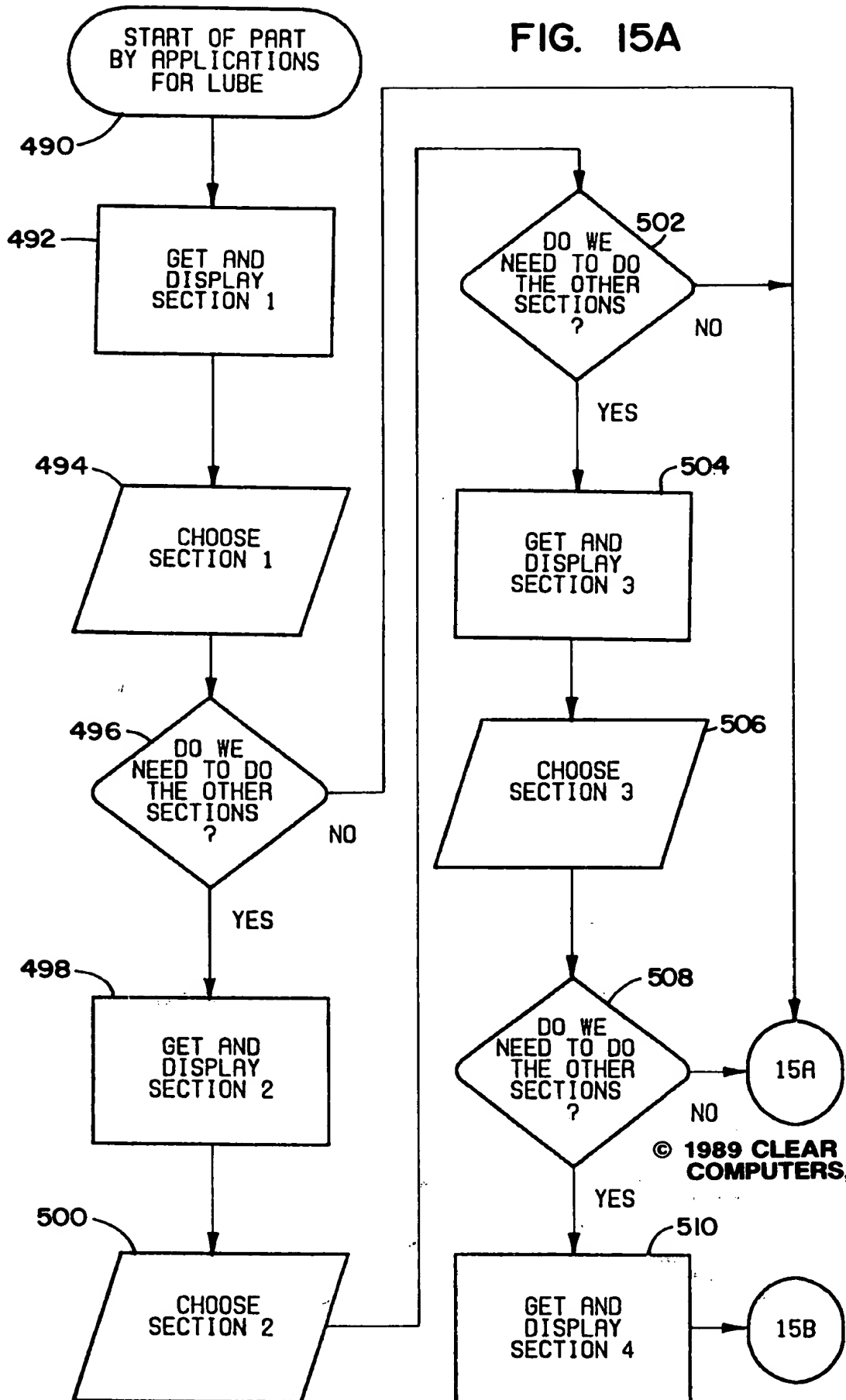


FIG. 15A



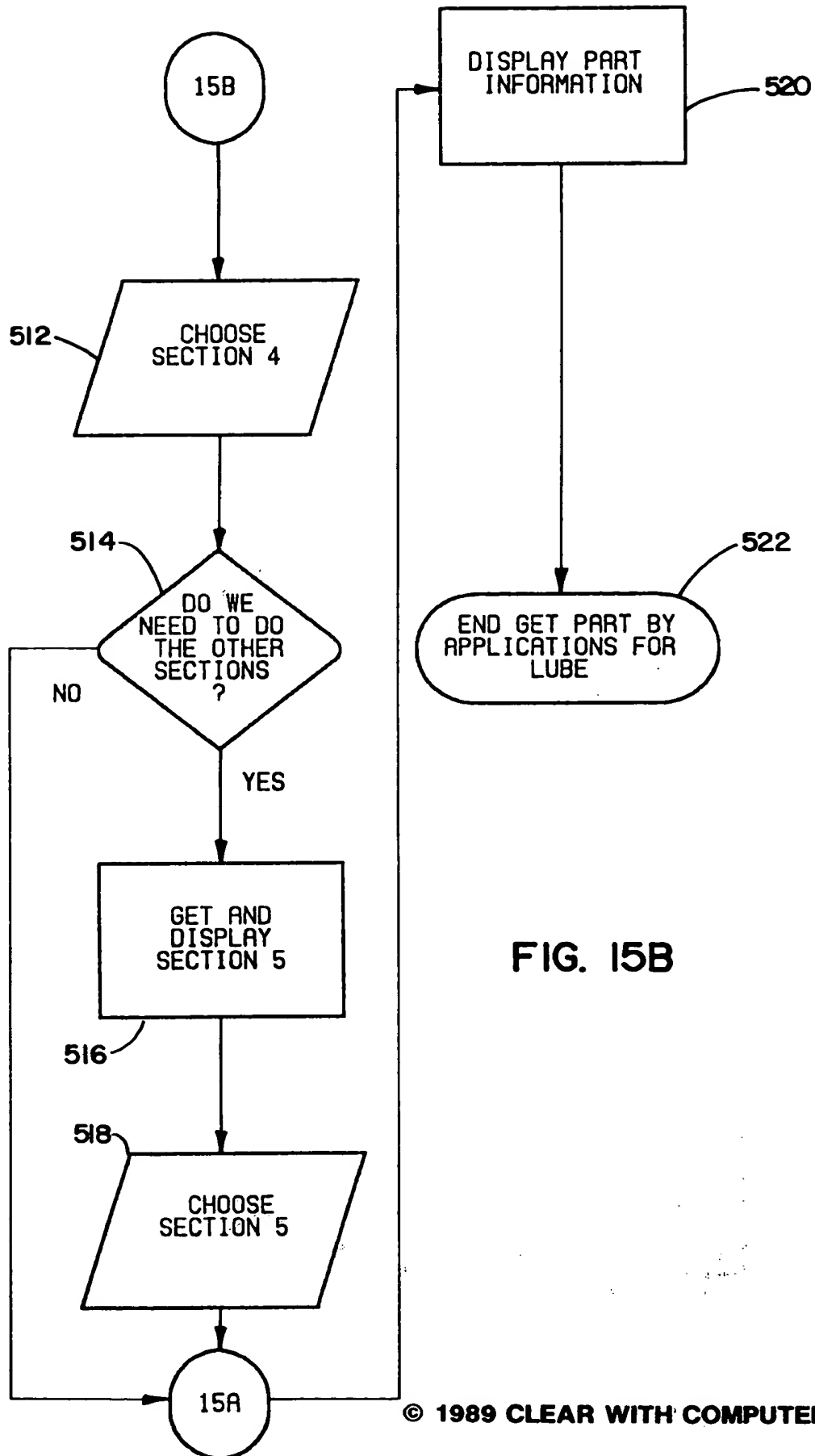
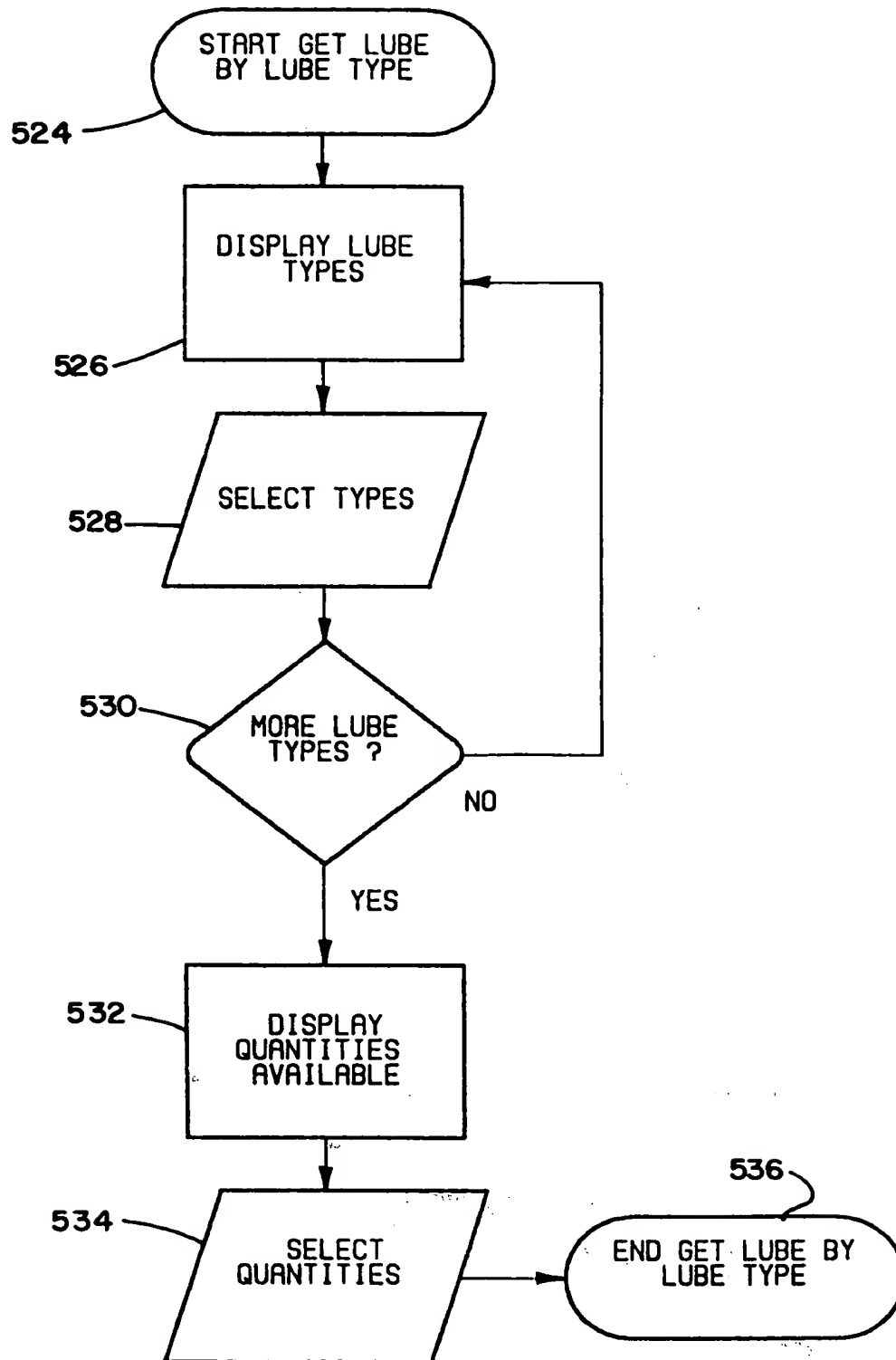


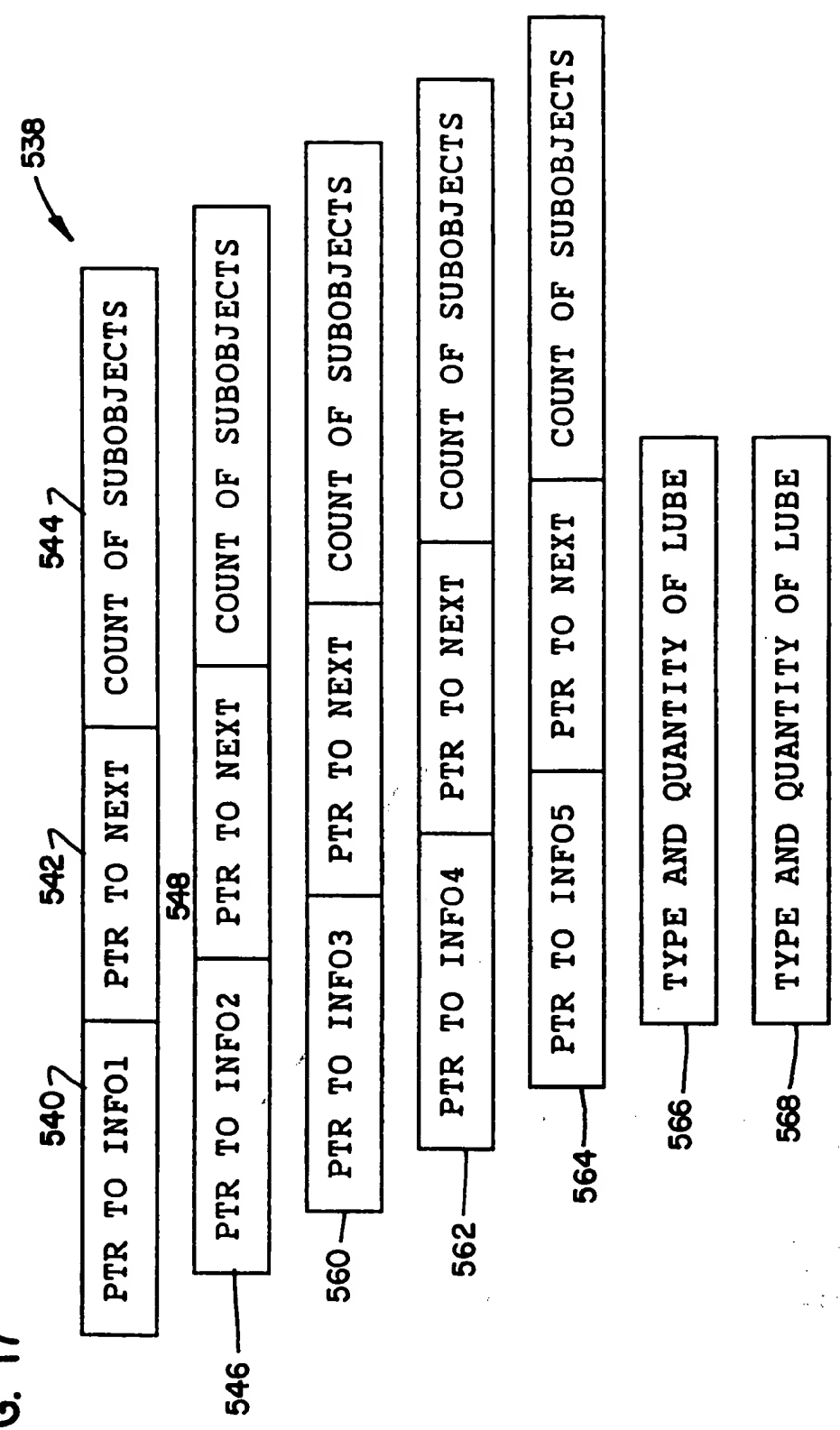
FIG. 15B

FIG. 16



APPROVED	DATE
BY	
DRAFTSMAN	

FIG. 17



ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
DATE 01-11-2001 BY 60321/SH/

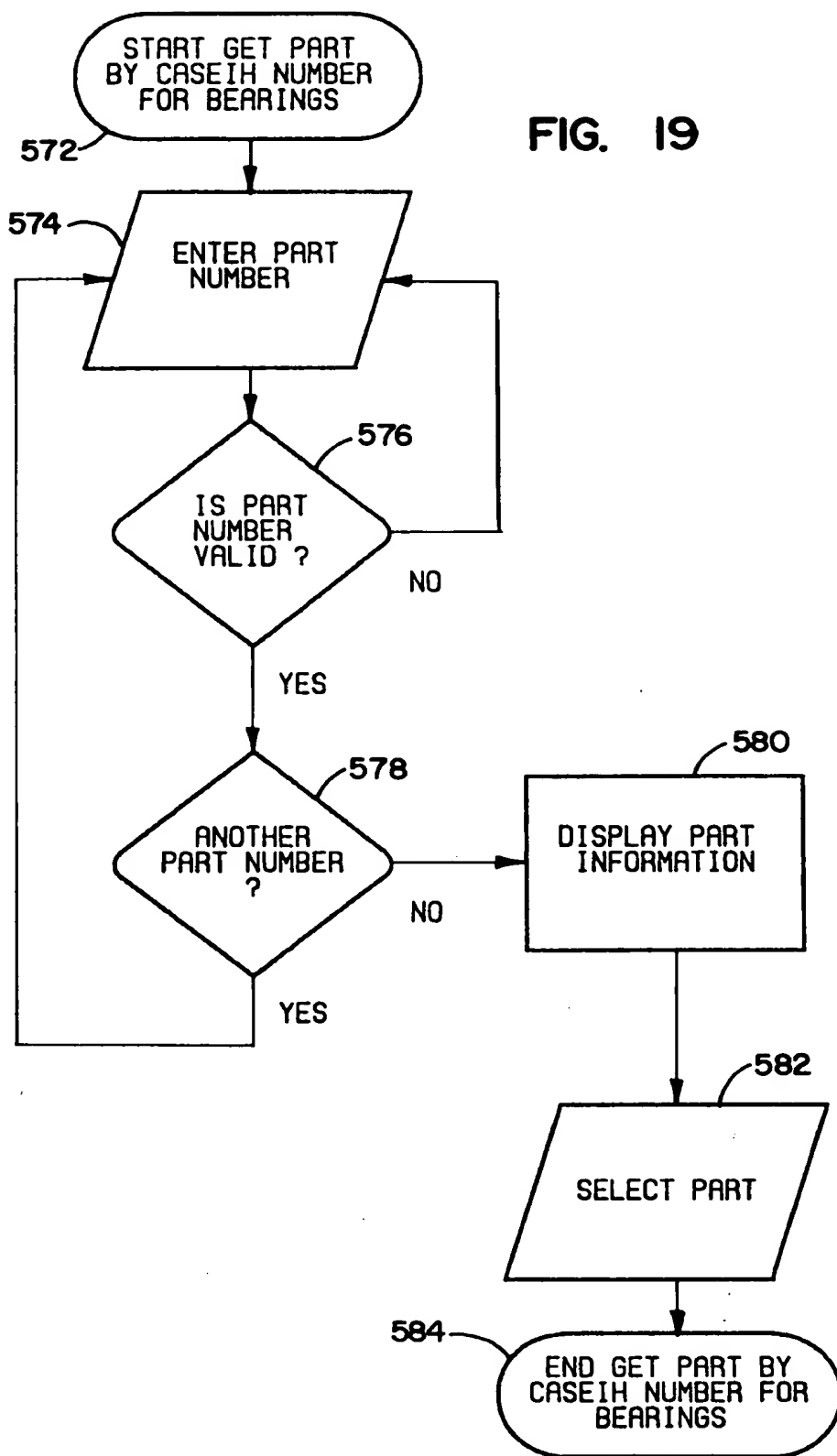
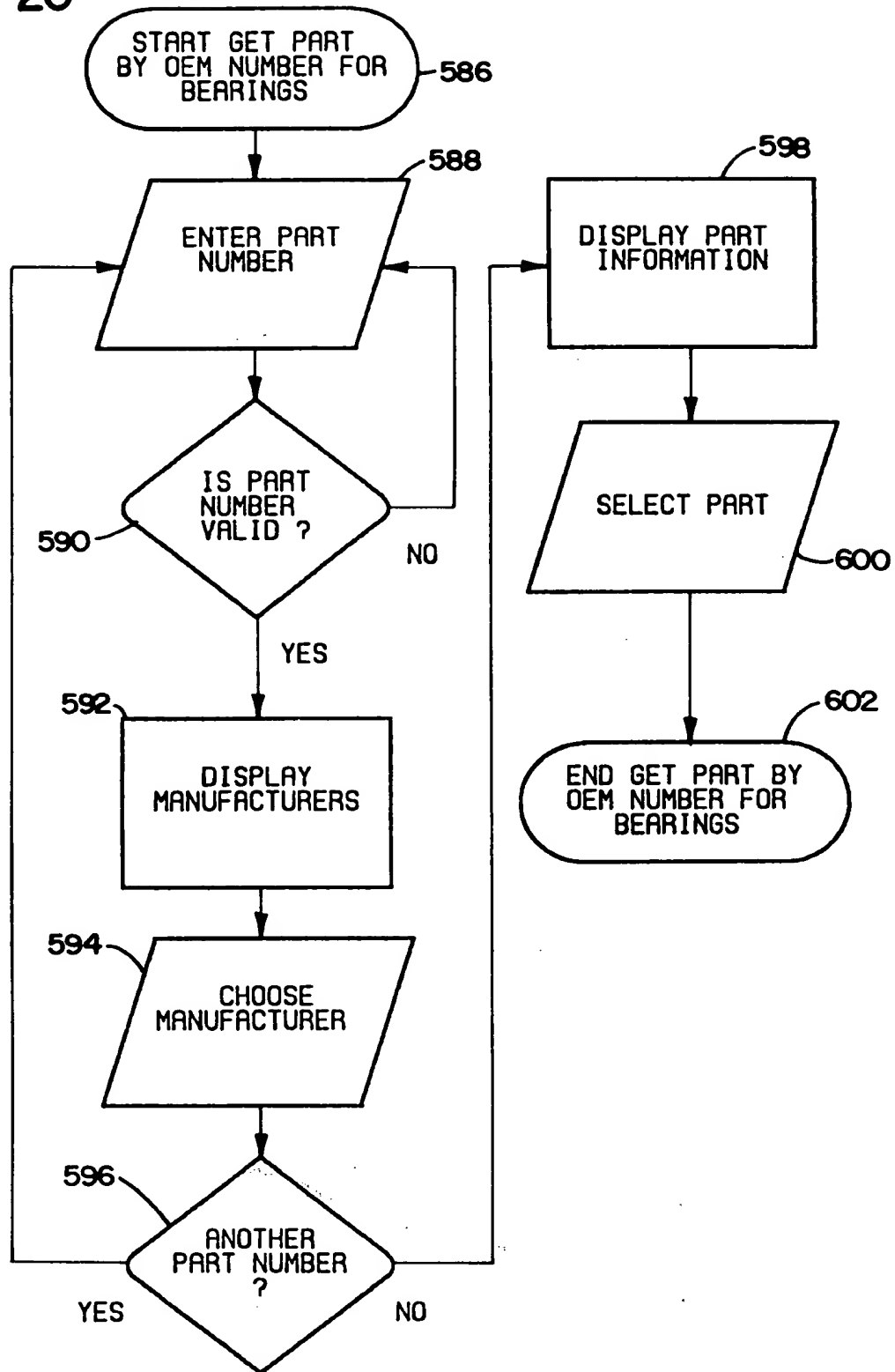


FIG. 19

FIG. 20



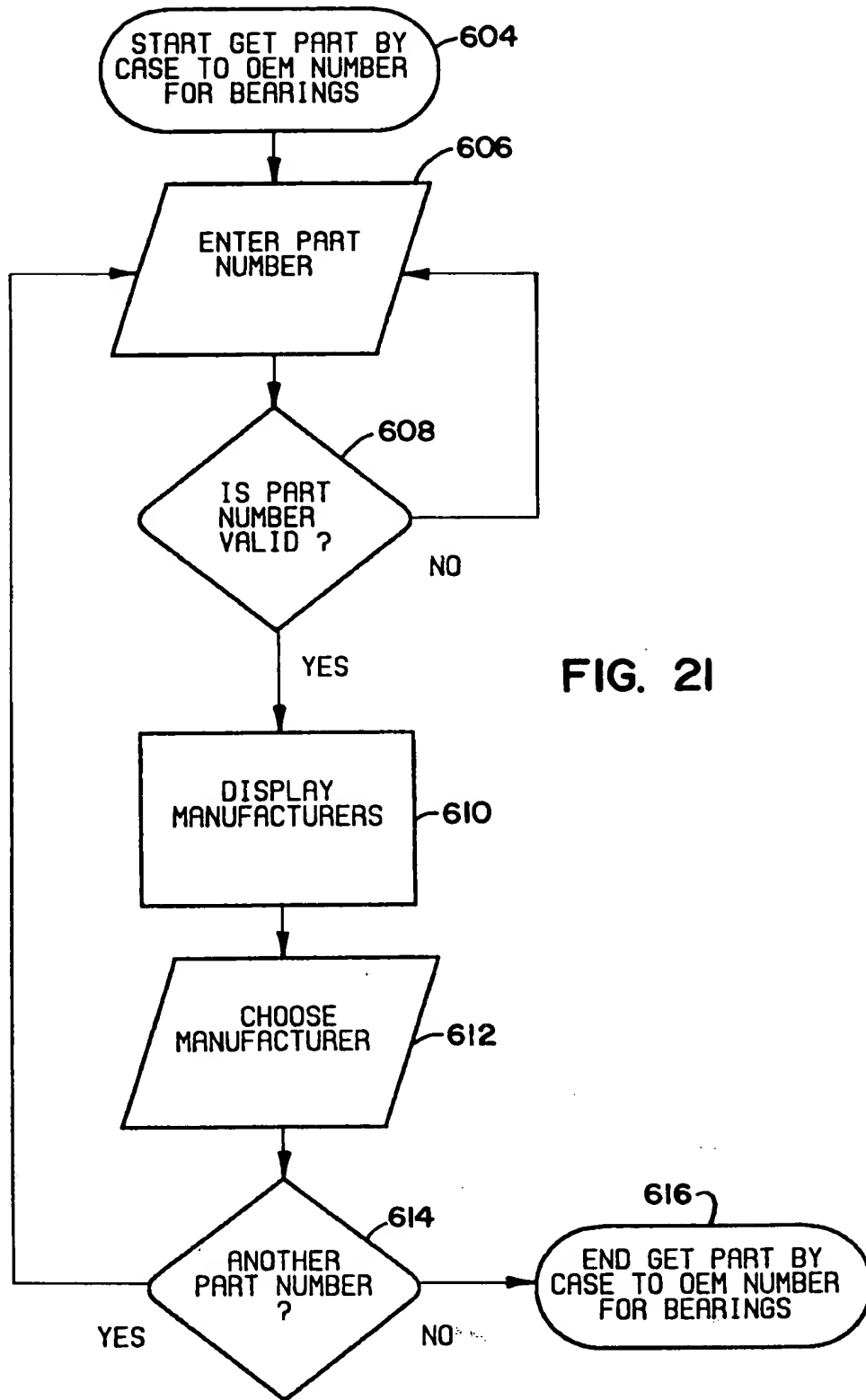


FIG. 21

FIG. 22

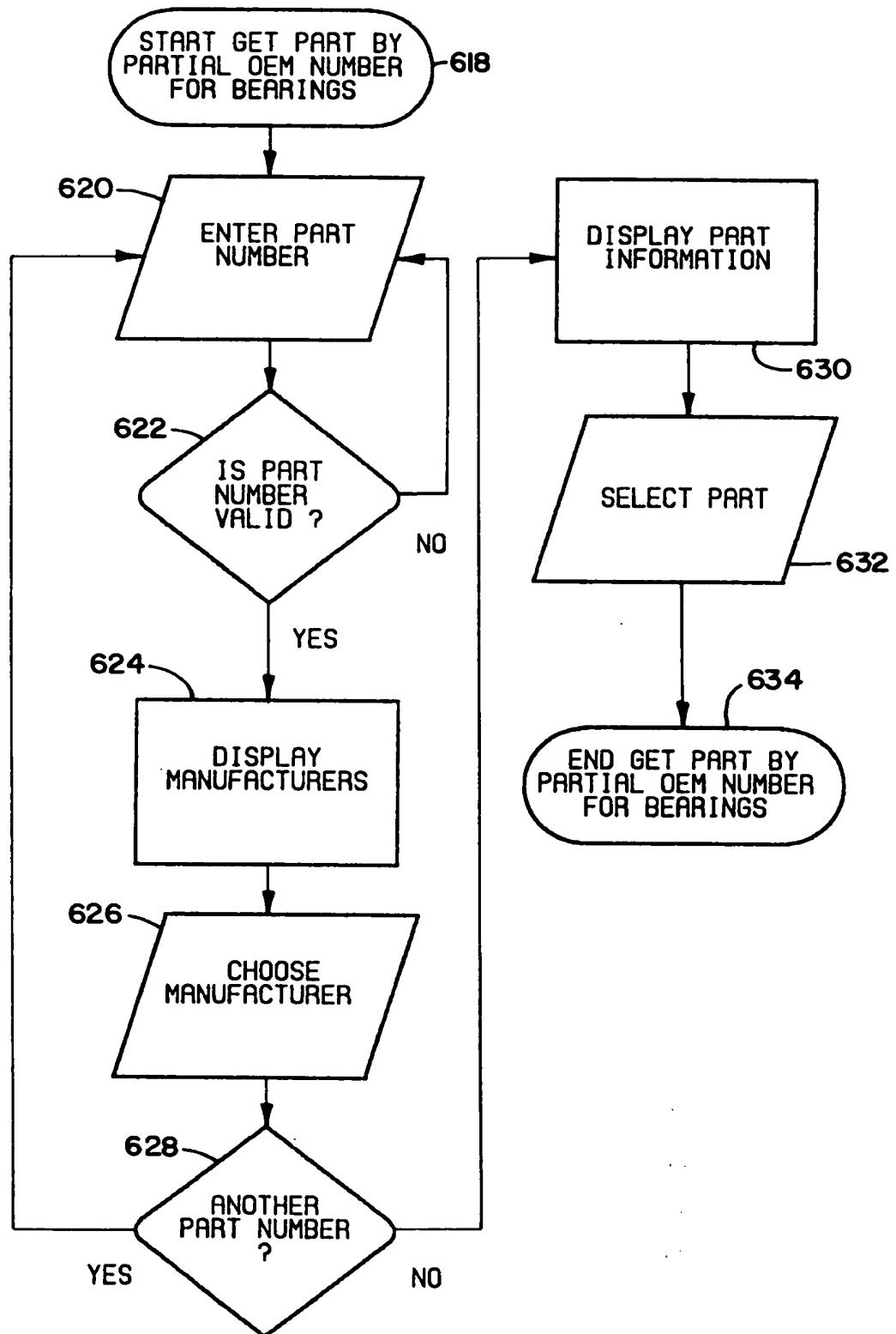


FIG. 23

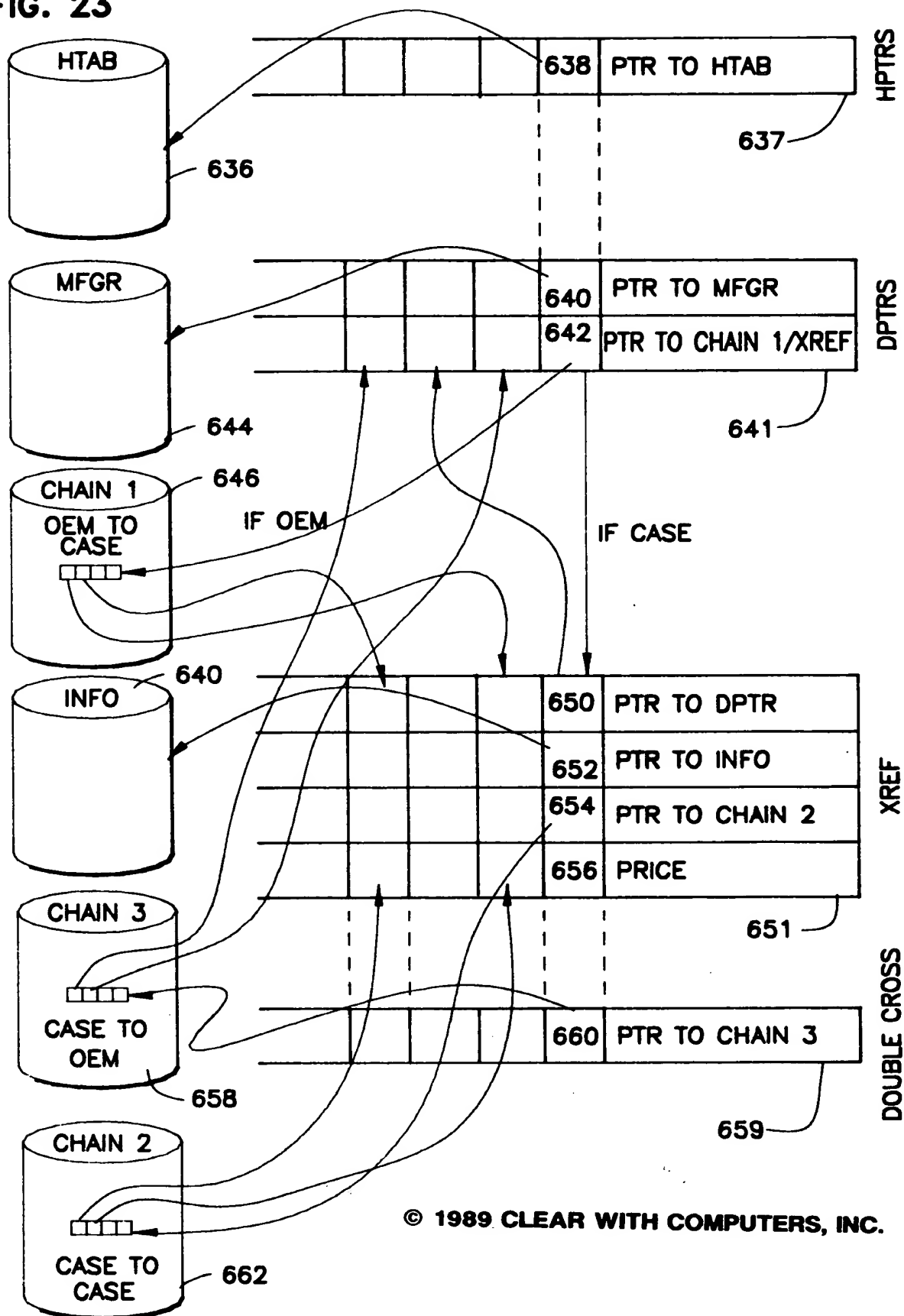


FIG. 24A

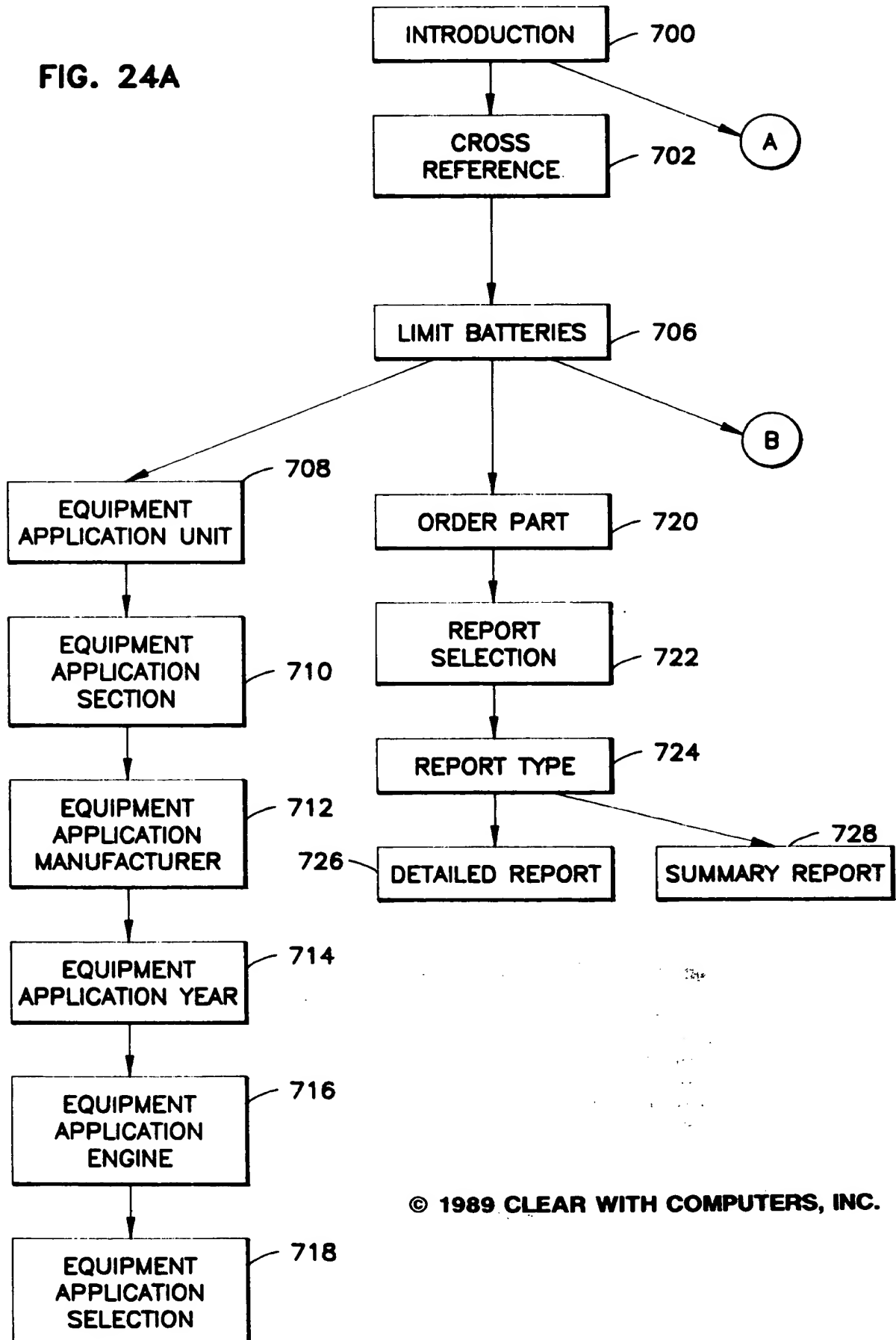


FIG. 24B

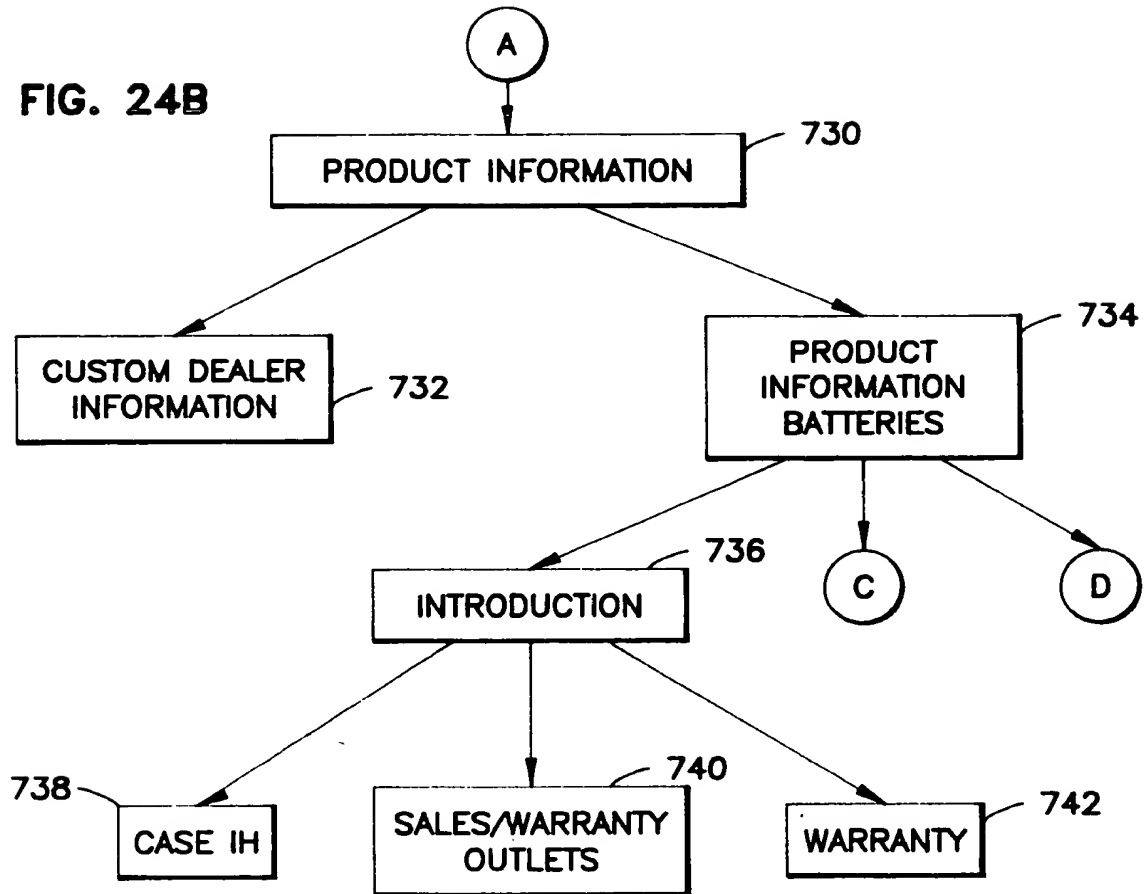


FIG. 24C

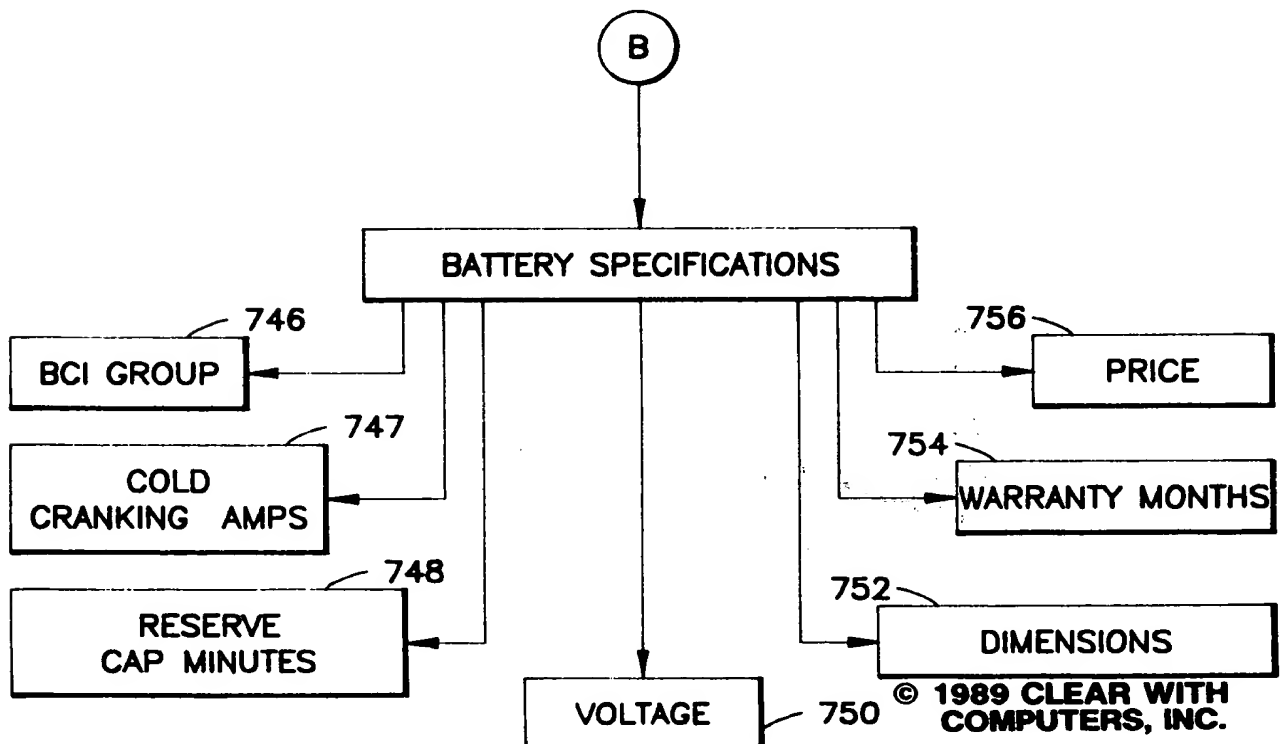


FIG. 24D

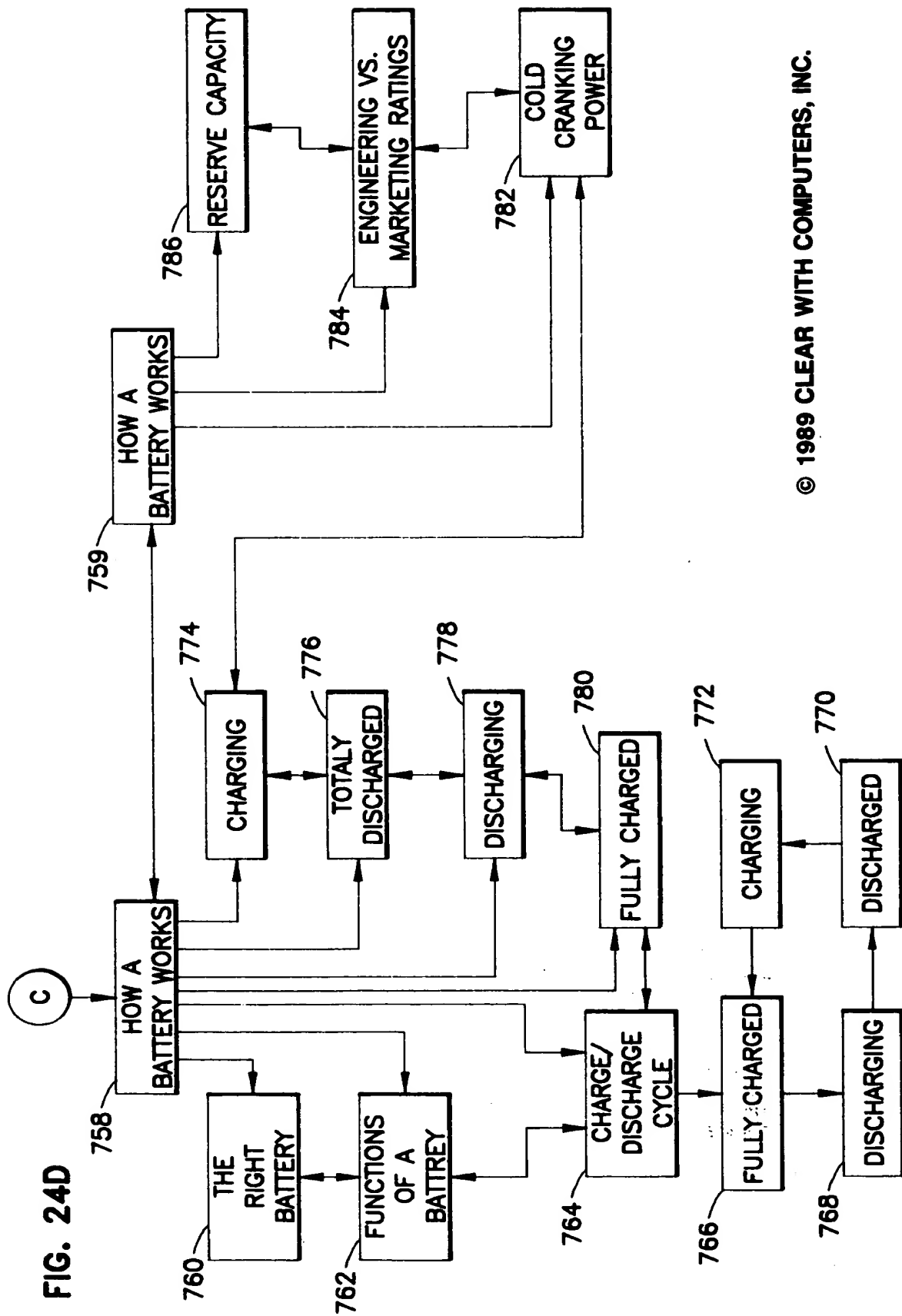


FIG. 24E

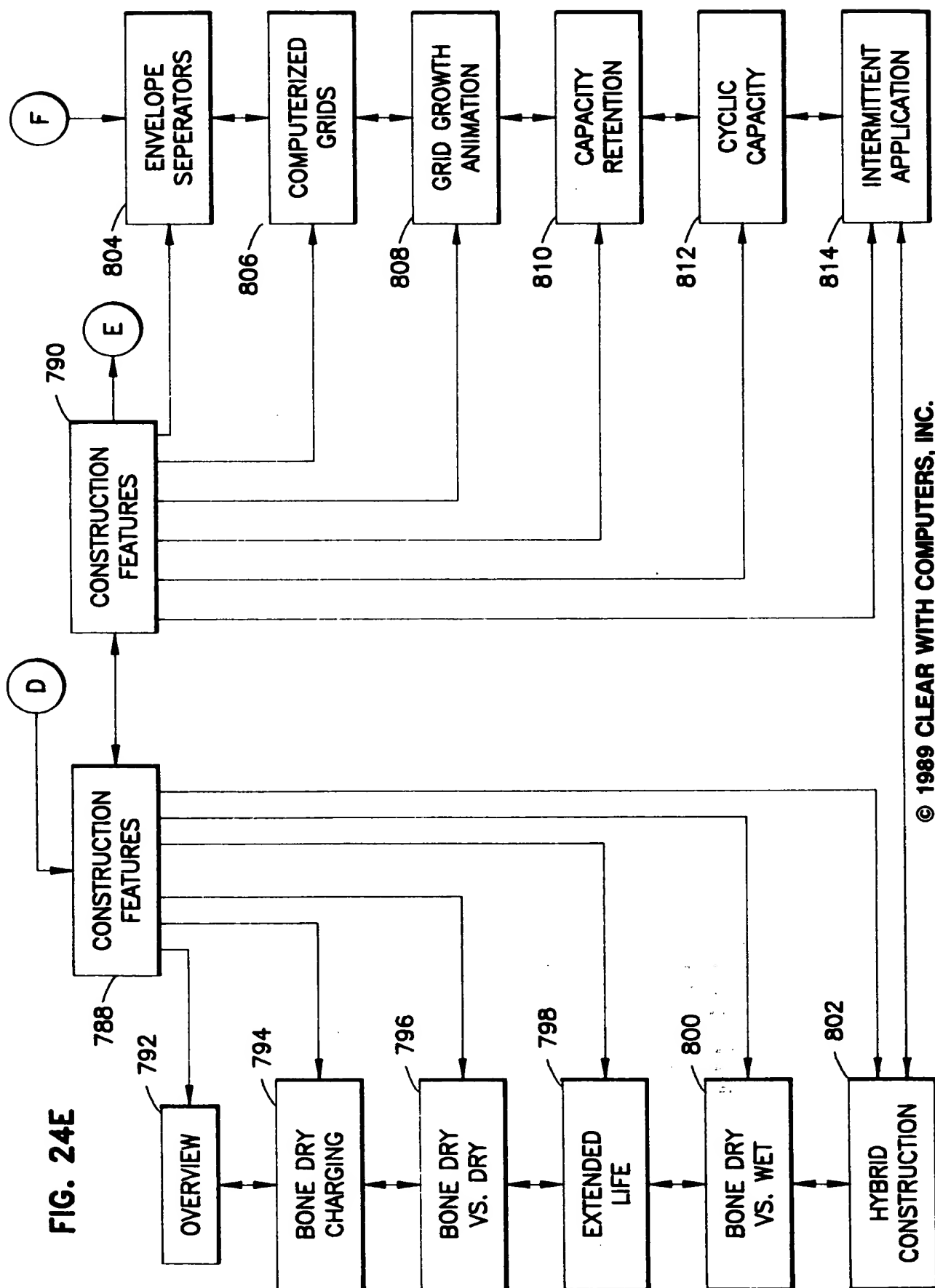


FIG. 24F

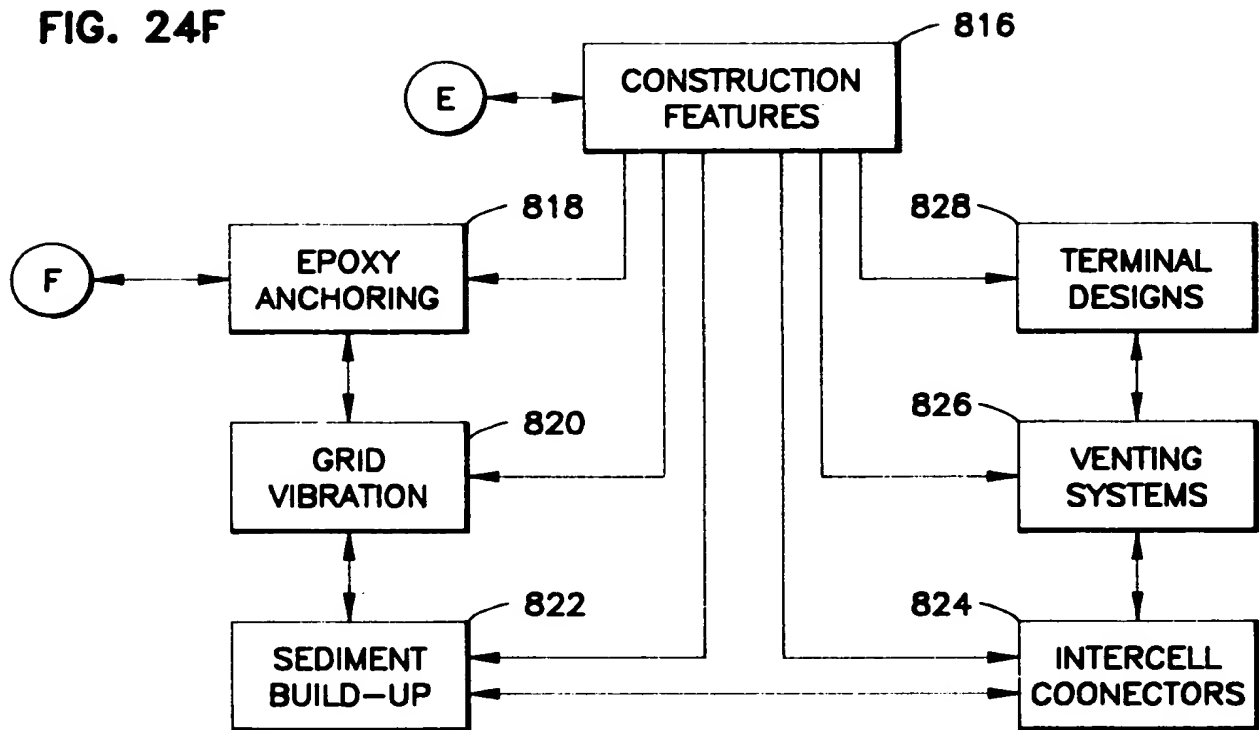


FIG. 18

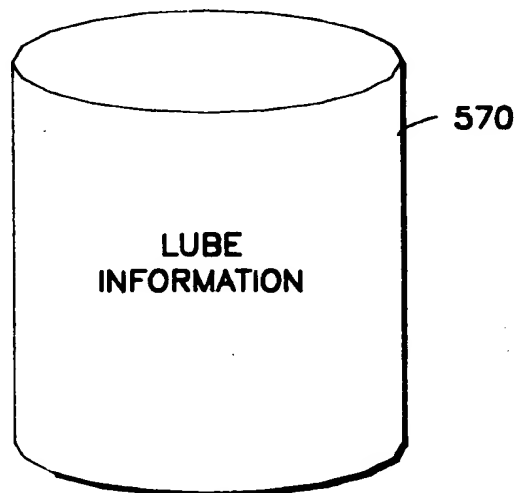


FIG. 25

CASEIH PARTS Introduction	
<p>QUICK REFERENCE Cross-Reference Product Information</p> <p>PRESENTATIONS/PROPOSALS Customer Presentation Customer Equipment</p> <p>TIME-SAVING TOOLS</p> <p>GRAPHIC SLIDE SHOW</p> <p>CUSTOMIZE</p> <p>Leave CASS PARTS</p>	<p><u>Cross-Reference</u></p> <p>Quickly find a part by entering a part number or a description of the equipment the part will fit</p>

700

FIG. 26

CASEIH PARTS Cross-Reference	
<p>Batteries</p> <p>Filters</p> <p>Remanufactured Electric</p> <p>Lubrication</p> <p>Bearings</p> <p>Main Menu</p>	<p><u>Batteries</u></p> <p>Choose a battery by specifying:</p> <p>1) CASE part number</p> <p>OR</p> <p>2) Equipment Application (make & model)</p> <p>OR</p> <p>3) Battery Specifications</p>

702

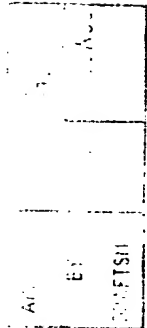


FIG. 27

7067

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group</p> <p>Cold Cranking Amps</p> <p>Reserve Cap Minutes</p> <p>Voltage</p> <p>Dimensions (inches)</p> <p>Warranty Months</p> <p>Price</p>	<p>CASEIH PART # _____</p> <p>Specify the CASEIH Part number for the battery you wish to select.</p> <p>Press right arrow when lit to go to order screen.</p>

FIG. 28

708

**CASEIH PARTS
Unit**

Equipment

Add a unit

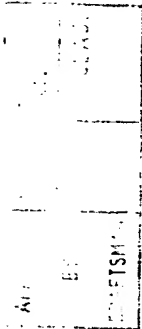


FIG. 29

710

CASEIH PARTS	
Unit	
Equipment Add a unit	
	<div>Section</div> <div>INDUSTRIAL, ROAD & MISC. EQUIPMENT FARM EQUIPMENT LIGHT TRUCKS & VANS PASSENGER CARS TRUCKS, BUSES & COACHES</div>

FIG. 30

712

CASEIH PARTS Unit	
Equipment Add a unit	<div> <p>Manufacturer</p> <hr/> <p>ACURA ALFA ROMEO ACADIAN (GM CANADA) AMERICAN MOTORS AMC/EAGLE/RENAULT AUDI AUSTIN AUSTIN HEALEY AUTO UNION-DKW BEAUMONT (GM CANADA)</p> <p>1 of 7</p> </div>

FIG. 31

714

CASEIH PARTS Unit	
Equipment	<div> <div>Year</div> <div> 1970-77 1970-79 1973-74 1974-77 1974-79 1975-76 1978-79 1978-81 1980-81 1982 1 of 2 </div> </div>
Add a unit	

FIG. 32

716

CASEIH PARTS Unit	
Equipment	Units
AUDI Add a unit	<div> <div> PASS Manu Type Mode Year Engi </div> <div> Engine 80 ALL OTHERS OPTIONAL </div> </div>

1.	2.
3.	4.
5.	6.
7.	8.
9.	10.
11.	12.
13.	14.
15.	16.
17.	18.
19.	20.
21.	22.
23.	24.
25.	26.
27.	28.
29.	30.
31.	32.
33.	34.
35.	36.
37.	38.
39.	40.
41.	42.
43.	44.
45.	46.
47.	48.
49.	50.
51.	52.
53.	54.
55.	56.
57.	58.
59.	60.
61.	62.
63.	64.
65.	66.
67.	68.
69.	70.
71.	72.
73.	74.
75.	76.
77.	78.
79.	80.
81.	82.
83.	84.
85.	86.
87.	88.
89.	90.
91.	92.
93.	94.
95.	96.
97.	98.
99.	100.

FIG. 33

718

CASEIH PARTS Unit	
Equipment	Units
AUDI Add a unit	PASSENGER CARS Manufacturer AUDI Type ALL Model All Models Year 1970-77 Engine 80

FIG. 34

720

CASEIH PARTS		
Limit Batteries		
42	12V 66 Plates 390 CC 50 MO 1 Battery(s) on unit	
42	12V 66 Plates 390 CC 50 MO 1 Battery(s) on unit	
42	12V 66 Plates 390 CC 50 MO 1 Battery(s) on unit	
AUDI ALL MODELS 1970-77 ALL OTHERS		
Cold Cranking @ 0 deg F (min) 390 AMPS		
3.6 Qts Acid 18 lbs dry 27 lbs wet		
Dimensions (in) 9.31 x 6.87 x 6.87		
90 day full replacement, 50 Mo Warranty		
PART NUMBER: B4250		\$ 46.99

© 1989 CLEAR WITH COMPUTERS, INC. 721

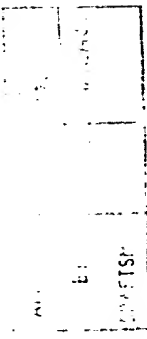


FIG. 35

722

CASEIH PARTS Limit Batteries			Report Selection
42	12V	66 Plates	
42	12V	390 CC 50 MO 1 Battery(s) on unit	1. Proposal/Order 2. Comparision 3. Application
42	12V	390 CC 50 MO 1 Battery(s) on unit	
42	12V	390 CC 50 MO 1 Battery(s) on unit	
AUDI ALL MODELS 1970-77			
Cold Cranking @ 0 deg. F (min) 390 AMPS			
3.6 Qts Acid 18 lbs dry 27 lbs wet			
Dimensions (in) 9.31 x 6.87 x 6.87			
90 day full replacement, 50 Mo Warranty			
PART NUMBER: B4250			\$ 46.99

FIG. 36

724

CASEIH PARTS Limit Batteries			Report Type 1. Detailed 2. Summary
42	12V	66 Plates	
42	12V	390 CC 50 MO 1 Battery(s) on unit	
42	12V	390 CC 50 MO 1 Battery(s) on unit	
42	12V	390 CC 50 MO 1 Battery(s) on unit	
AUDI ALL MODELS 1970-77 ALL OTHERS			
Cold Cranking @ 0 deg F (min) 390 AMPS			
3.6 Qts Acid 18 lbs dry 27 lbs wet			
Dimensions (in) 9.31 x 6.87 x 6.87			
90 day full replacement, 50 Mo Warranty			
PART NUMBER: B4250			\$ 46.99

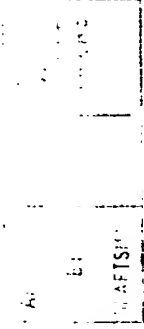


FIG. 37

PROPOSAL / ORDER

726

QTY	PART NUMBER	DESCRIPTION	PRICE	PRICE
			EA (\$)	TOTAL (\$)

BATTERY:

1	B4250	42 12V 66 Plates 390 CC 50 MO	46.99	46.99
	AUDI	ALL MODELS 1970-77 ALL OTHERS		
		Cold Cranking @ 0 deg F (min) 390 AMPS		
		3.6 Qts Acid 18 lbs dry 27 lbs wet		
		Dimensions (in) 9.31 x 6.87 x 6.87		
		90 day full replacement, 50 Mo Warranty		

S U M M A R Y		
Quantity	Product	Price
1	BATTERY	\$ 46.99
BATTERY Subtotal:		\$ 46.99
Total:		\$ 46.99

X _____ X _____

Accepted by: _____

FIG. 38

PROPOSAL / ORDER

728

QTY	PART NUMBER	DESCRIPTION	PRICE EA (\$)	PRICE TOTAL (\$)
-----	----------------	-------------	------------------	---------------------

1	B4250	42 12V 66 Plates 390 CC 50 MO	46.99	46.99
		AUDI ALL MODELS 1970-77 ALL OTHERS		

BATTERY:

S U M M A R Y

Quantity	Product	Price
1	BATTERY	\$ 46.99

BATTERY Subtotal: \$ 46.99

Total: \$ 46.99

X _____ X _____

Accepted by: _____ © 1989 CLEAR WITH COMPUTERS, INC.

FIG. 39

746

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group Cold Cranking Amps Reserve Cap Minutes Voltage Dimensions (inches) Warranty Months Price</p>	<p>BATTERY SPECIFICATIONS</p> <p>Choose which battery specification categories are to be used to limit battery choice.</p> <p>Multiple categories can be used.</p> <p>BCI GROUP</p> <p>Specify the BCI Group you wish to select a battery from.</p> <p>Press right arrow when lit to go to order screen.</p>

FIG. 40

747

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group</p> <p>Cold Cranking Amps</p> <p>Reserve Cap Minutes</p> <p>Voltage</p> <p>Dimensions (inches)</p> <p>Warranty Months</p> <p>Price</p>	<p><u>BATTERY SPECIFICATIONS</u></p> <p>Choose which battery specification categories are to be used to limit battery choice.</p> <p>Multiple categories can be used.</p> <p><u>Cold Cranking Amps</u></p> <p>Specify the Cold Cranking Amps the battery must deliver.</p> <p>Press right arrow when lit to go to order screen.</p>

FIG. 41

748

CASEIH PARTS
Limit Batteries

BATTERY SPECIFICATIONS

CASEIH PART #

EQUIPMENT APPLICATION

BATTERY SPECIFICATIONS

BCI Group
Cold Cranking Amps
Reserve Cap Minutes
Voltage
Dimensions (inches)
Warranty Months
Price

Choose which battery specification categories are to be used to limit battery choice.

Multiple categories can be used.

Reserve Capacity Minutes

Specify the Reserve Capacity Minutes the battery must deliver.

Press right arrow when lit to go to order screen.

FIG. 42

750

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group</p> <p>Cold Cranking Amps</p> <p>Reserve Cap Minutes</p> <p>Voltage</p> <p>Dimensions (inches)</p> <p>Warranty Months</p> <p>Price</p>	<p><u>BATTERY SPECIFICATIONS</u></p> <p>Choose which battery specification categories are to be used to limit battery choice.</p> <p>Multiple categories can be used.</p> <p><u>Voltage</u></p> <p>Specify the required Voltage the battery must have.</p> <p>Press right arrow when lit to go to order screen.</p>

© 1989 CLEAR WITH COMPUTERS, INC.

FIG. 43

752

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group</p> <p>Cold Cranking Amps</p> <p>Reserve Cap Minutes</p> <p>Voltage</p> <p>Dimensions (inches)</p> <p>Warranty Months</p> <p>Price</p>	<p>BATTERY SPECIFICATIONS</p> <p>Choose which battery specification categories are to be used to limit battery choice. Multiple categories can be used.</p> <hr/> <p>Dimensions (inches)</p> <p>Will locate battery(s) of exact size or if not exact size, available battery(s) whose 3 measurements are within 1/2 inch smaller.</p> <hr/> <p>Press right arrow when lit to go to order screen.</p>

FIG. 44

754

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group</p> <p>Cold Cranking Amps</p> <p>Reserve Cap Minutes</p> <p>Voltage</p> <p>Dimensions (inches)</p> <p>Warranty Months</p> <p>Price</p>	<p>BATTERY SPECIFICATIONS</p> <p>Choose which battery specification categories are to be used to limit battery choice.</p> <p>Multiple categories can be used.</p> <p>Warranty Months</p> <p>Specify the number of months the battery must be covered by warranty.</p> <p>Press right arrow when lit to go to order screen.</p>

FIG. 45

756

CASEIH PARTS Limit Batteries	
<p>CASEIH PART #</p> <p>EQUIPMENT APPLICATION</p> <p>BATTERY SPECIFICATIONS</p> <p>BCI Group</p> <p>Cold Cranking Amps</p> <p>Reserve Cap Minutes</p> <p>Voltage</p> <p>Dimensions (inches)</p> <p>Warranty Months</p> <p>Price</p>	<p>BATTERY SPECIFICATIONS</p> <p>Choose which battery specification categories are to be used to limit battery choice.</p> <p>Multiple categories can be used.</p> <p>Price</p> <p>Specify the desired target price of the battery.</p> <p>Press right arrow when lit to go to order screen.</p>

FIG. 46

CASEIH PARTS Facts, the CASEIH story	
<p>730 — DEALER NAME</p> <p>BATTERIES</p> <p>FILTERS</p> <p>REMANUFACTURED ELECTRIC</p> <p>LUBRICANTS</p> <p>BEARINGS</p> <p>Main Menu</p>	<p>DEALER NAME</p> <hr/> <p>Customized information for this dealership</p>

FIG. 47

CASEIH PARTS Facts, the CASEIH story	
<p>732 — DEALER NAME</p> <p>BATTERIES</p> <p>FILTERS</p> <p>REMANUFACTURED ELECTRIC</p> <p>LUBRICANTS</p> <p>BEARINGS</p> <p>Main Menu</p>	<p>DEALER NAME</p> <hr/> <p>Background</p> <p>Parts</p> <p>Service</p>

© 1989 CLEAR
WITH
COMPUTERS,
INC.

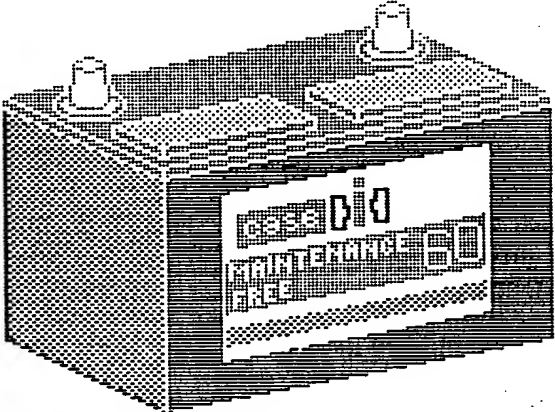
FIG. 48


734

CASEIH PARTS Facts, the CASEIH story	
DEALER NAME BATTERIES FILTERS REMANUFACTURED ELECTRIC LUBRICANTS BEARINGS Main Menu	BATTERIES
	Introduction
	How a Battery Works
	Construction Features

FIG. 49

736





Batteries
for every
purpose

CASEIH
Sales/Warranty Outlets
Warranty



Headquartered in Racine, WI, CASEIH is a worldwide manufacturer and marketer of agricultural and construction equipment. CASEIH is a subsidiary of Tenneco, Inc.

TEENECO

Headquartered in Houston, TX, Tenneco Inc., is a diversified company with major business interests in oil, natural gas, pipelines, agricultural and construction equipment, ship building, automotive parts, chemicals packaging, agriculture, and minerals.

FIG. 50

738

FIG. 51

740

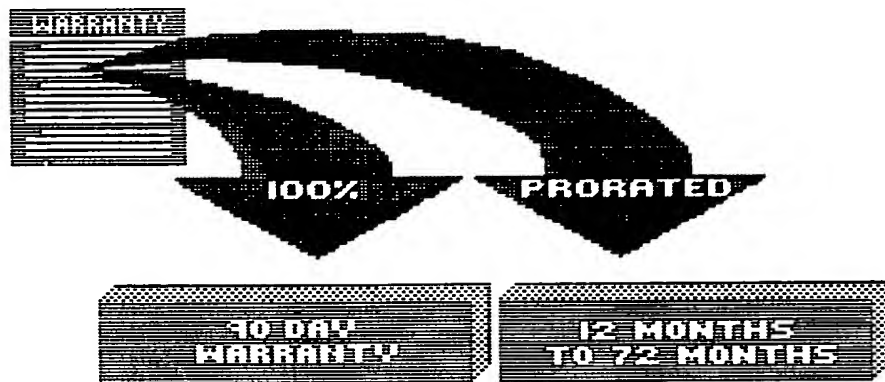
CASEIH NORTH AMERICA

OVER 2,200 SALES OUTLETS

+ CASEIH insures parts availability and warranty service through its many sales outlets all across North America

FIG. 52

742

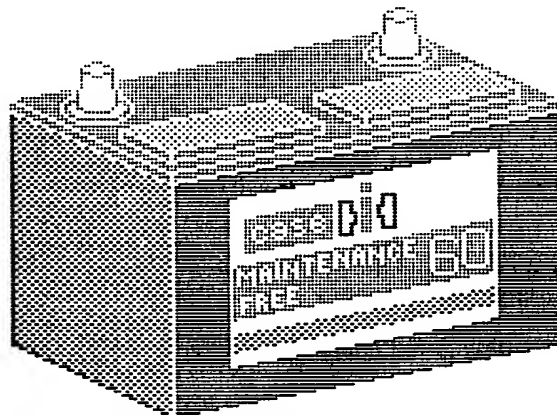


*** WARRANTY**

- + CASEIH stands behind their batteries with the best warranty in the industry, regardless of vehicle application

FIG. 53

758



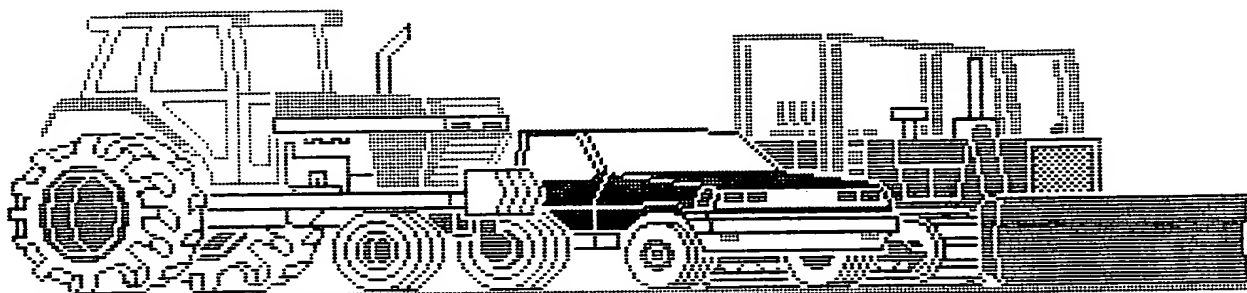
**Batteries
for every
purpose**

The Right Battery
Functions of a Battery
Charge/Discharge Cycle
Fully Charged
Discharging
Totally Discharged
Charging

Screen 1 of 2

FIG. 54

760

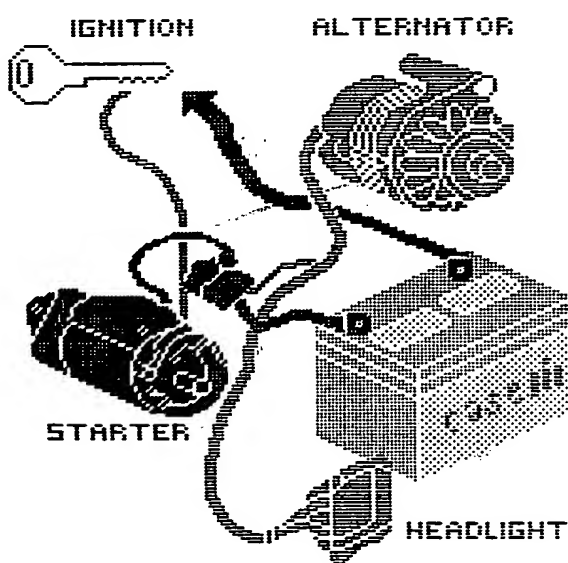


*** THE RIGHT BATTERY FOR YOUR NEEDS**

- + A wide selection of quality batteries, made in North America by skilled craftsmen, provide superior performance features for almost any application

FIG. 55

762



MAIN FUNCTIONS OF THE BATTERY

- 1) Supply power to starter and ignition system
- 2) Supply extra power when vehicle's electrical load requirements exceed supply from charging system
- 3) Protect electrical system from temporarily high voltages

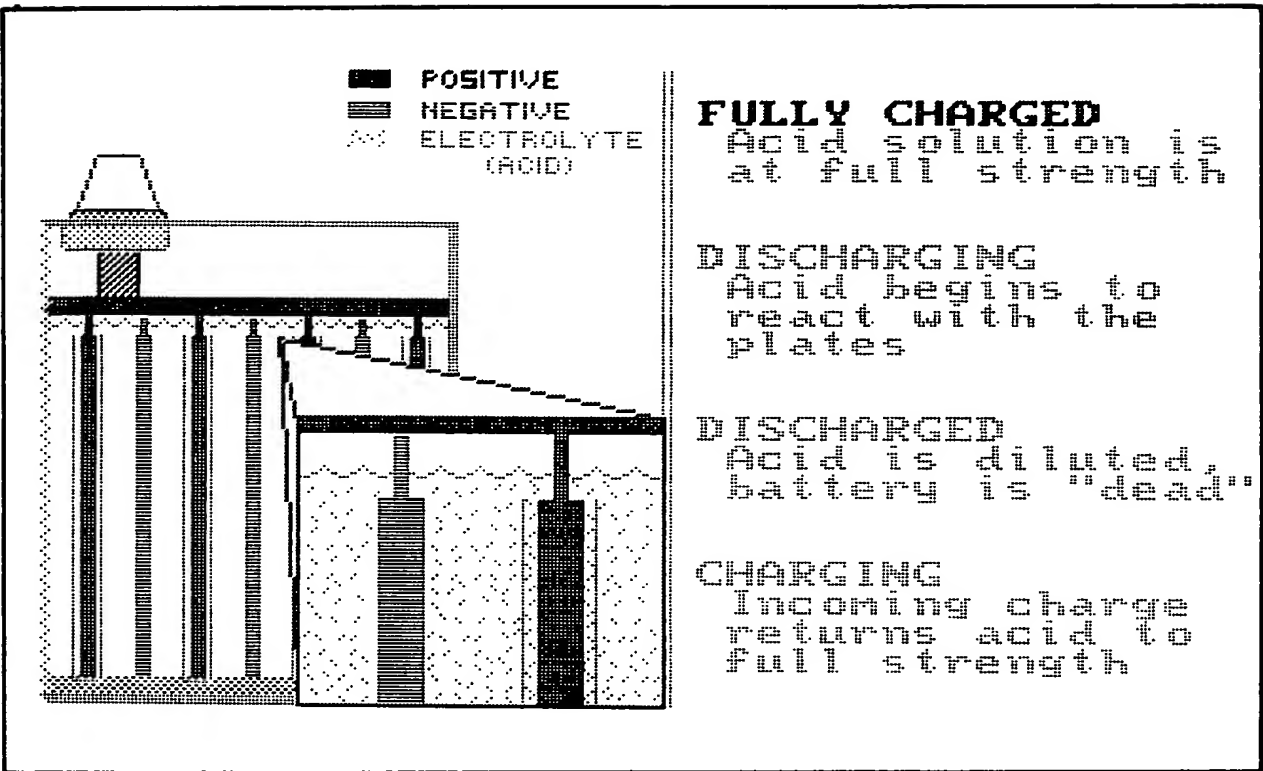


FIG. 56

766

FIG. 57

768

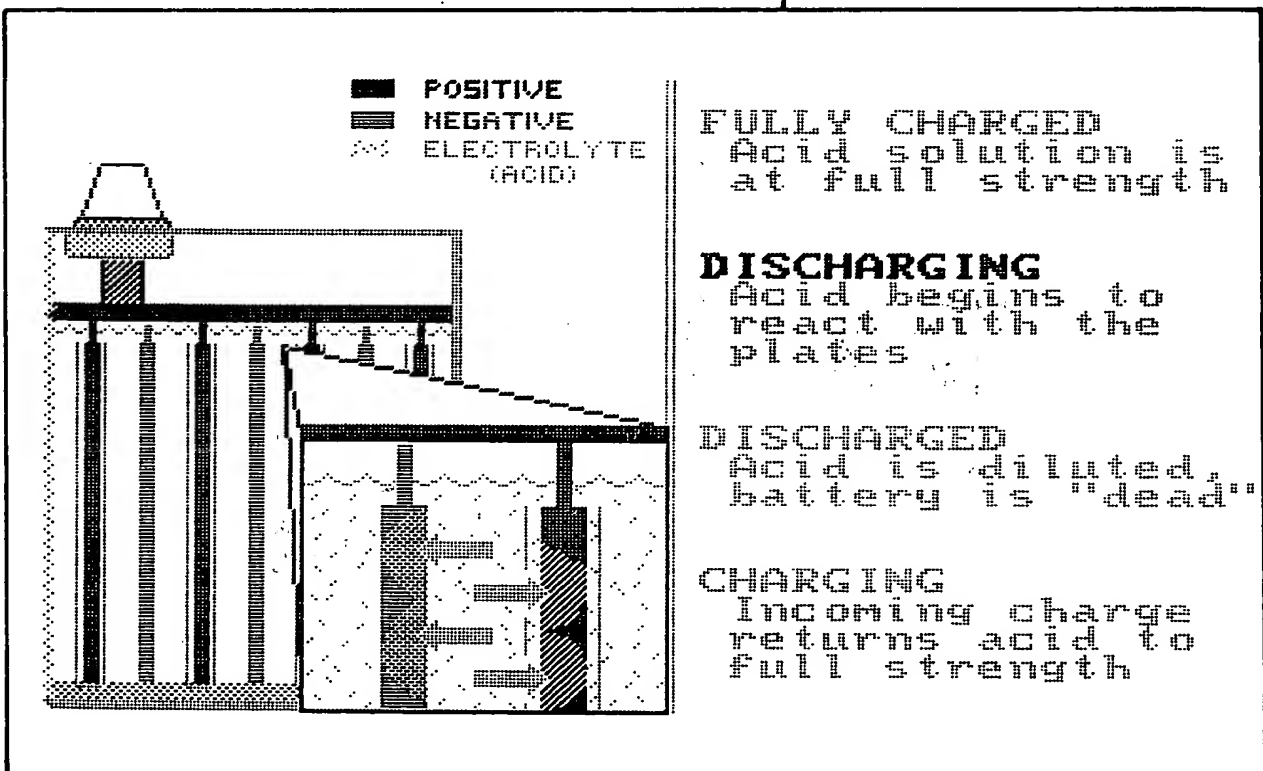


FIG. 58

770

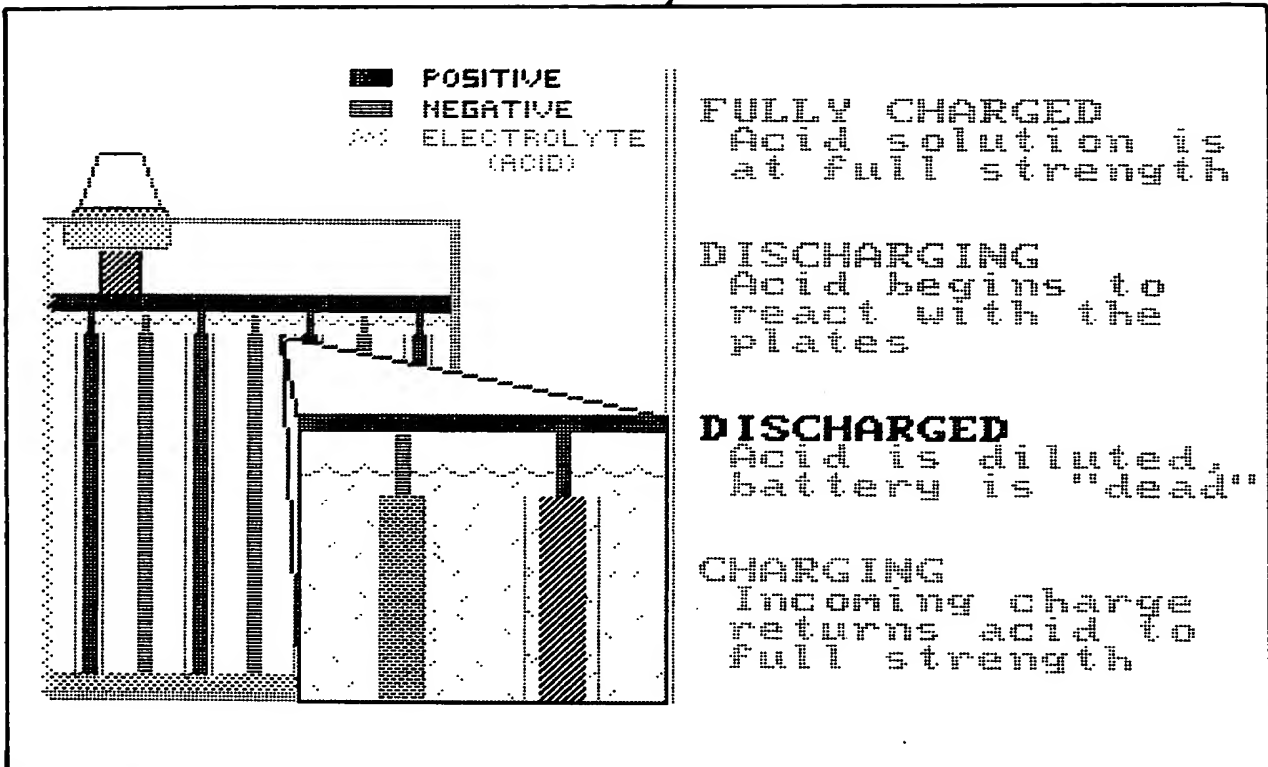


FIG. 59

772

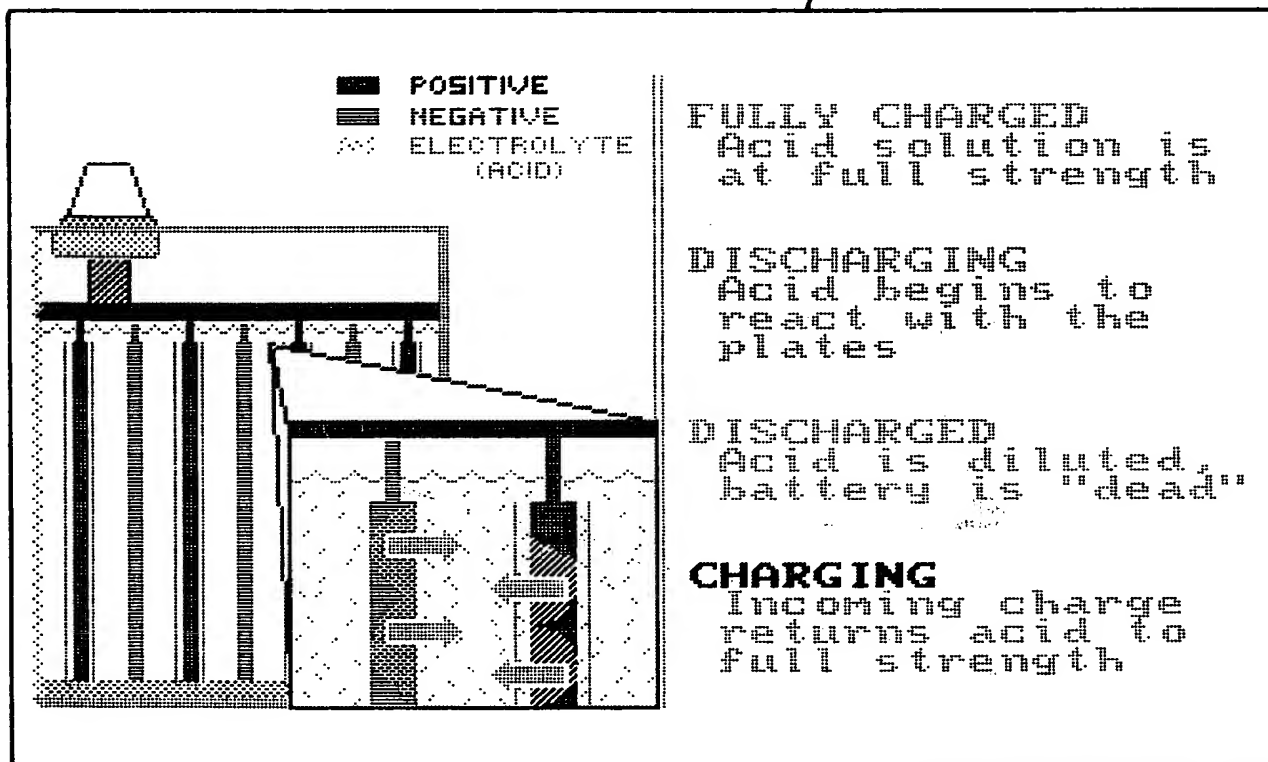


FIG. 60

780

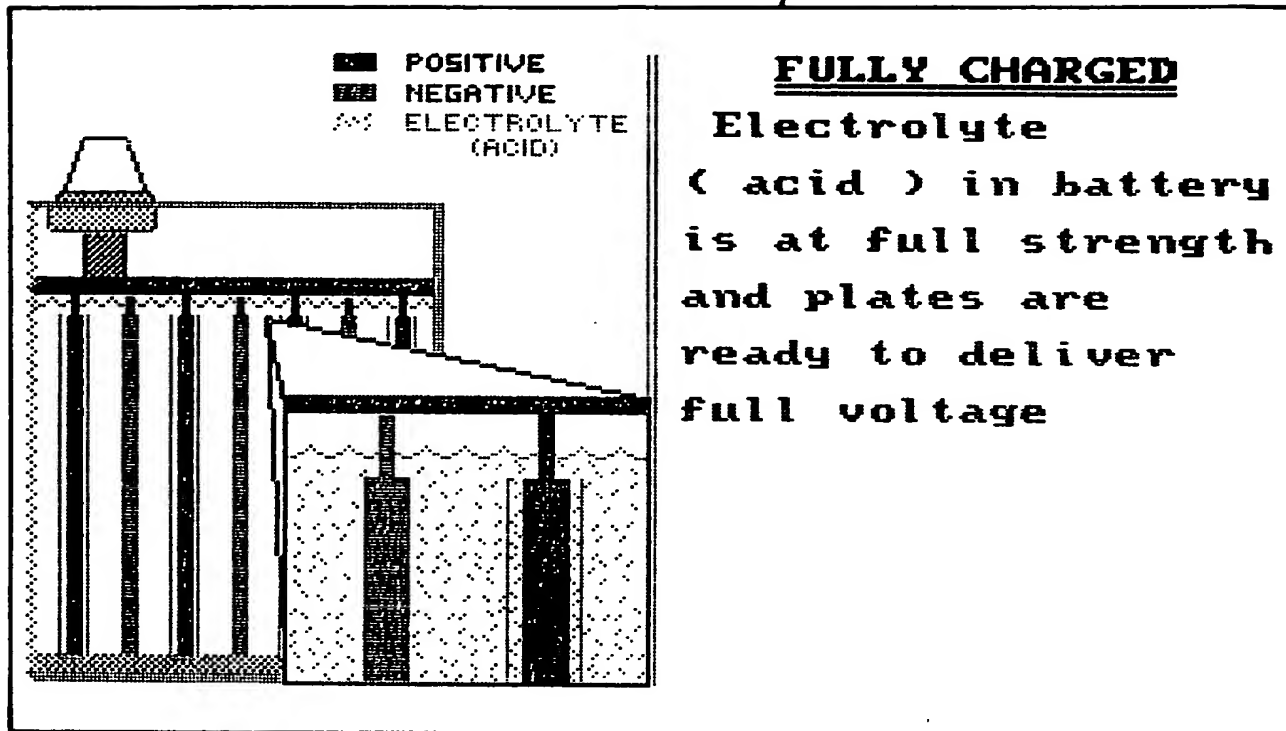


FIG. 61

778

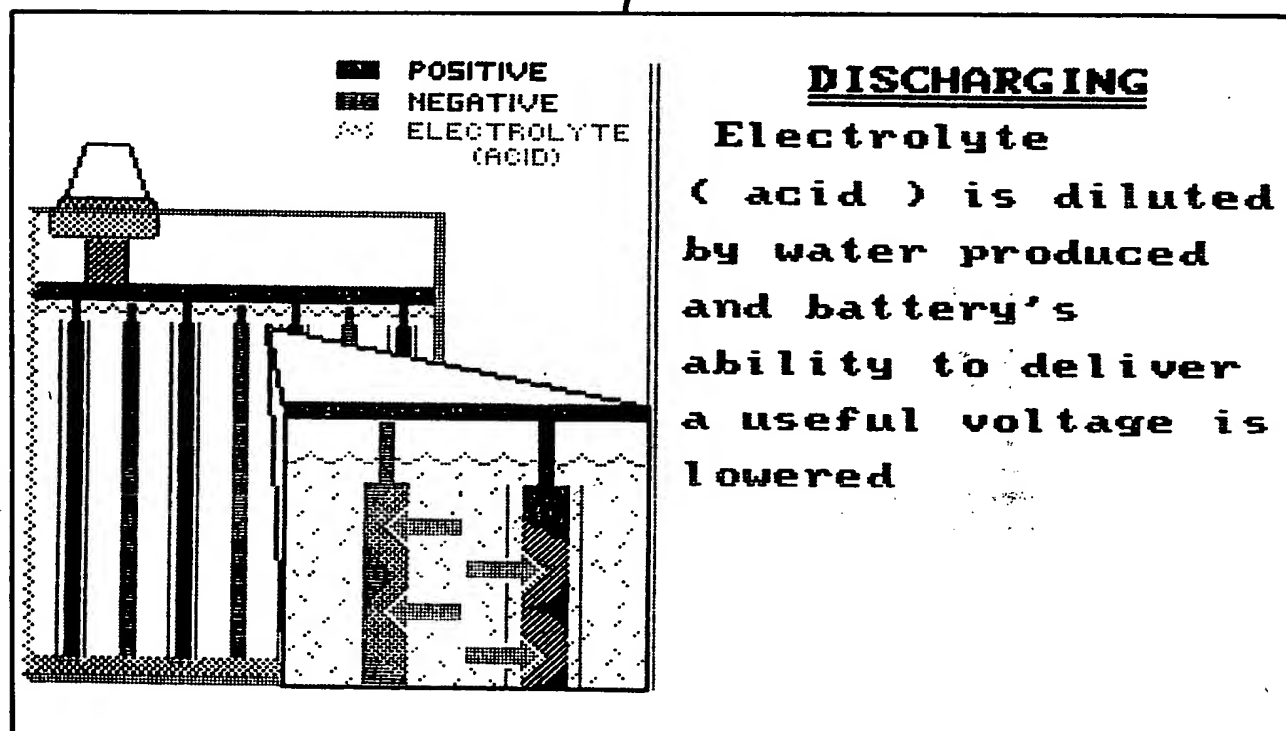


FIG. 62

776

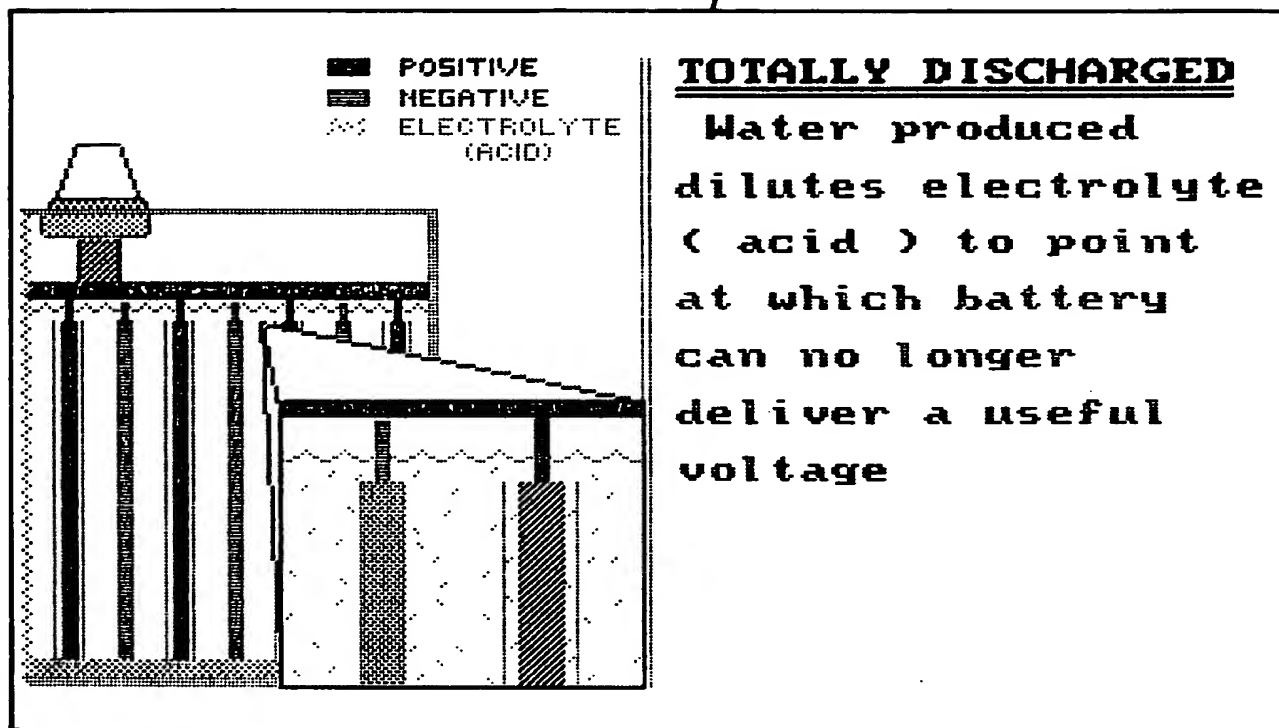


FIG. 63

774

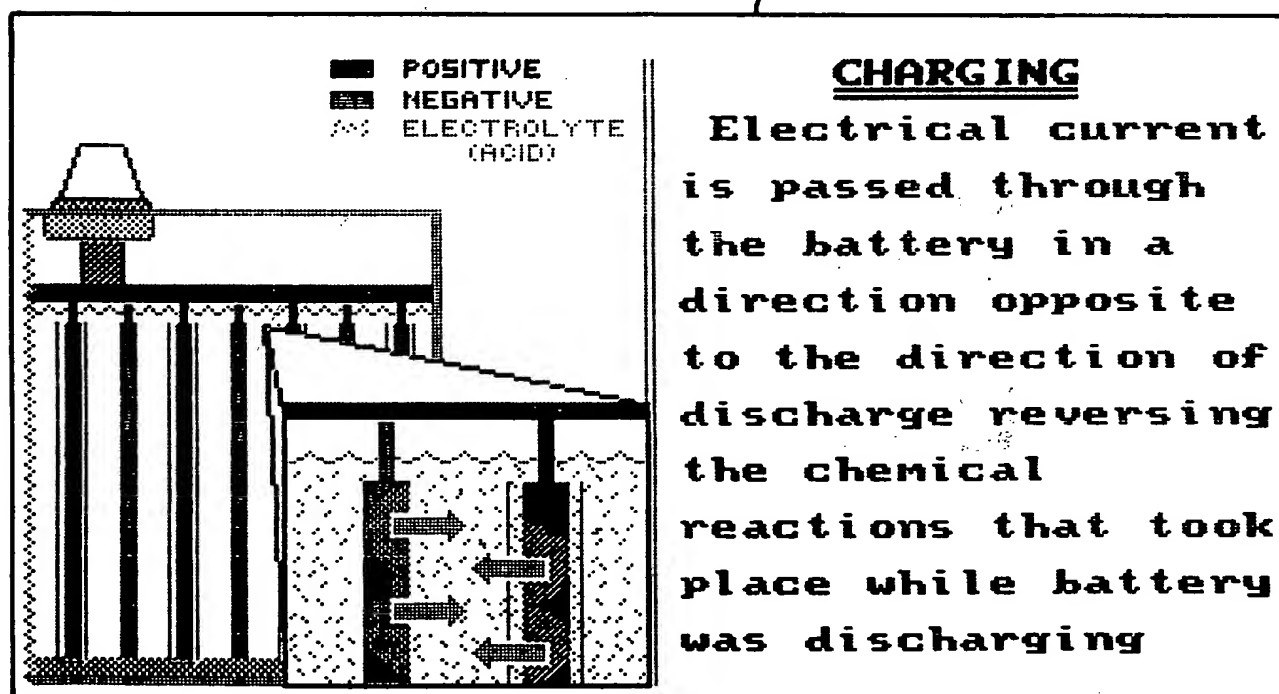
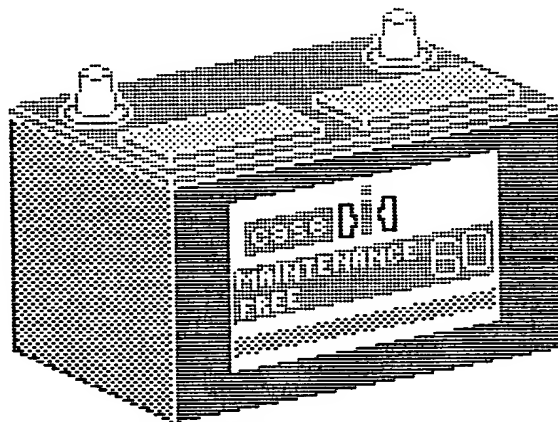


FIG. 64

759



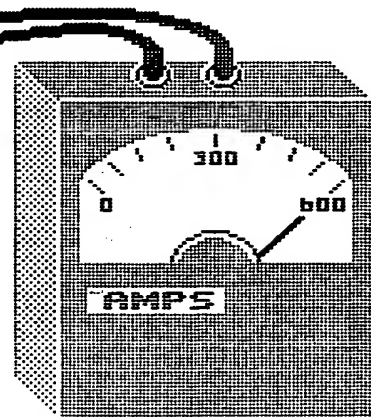
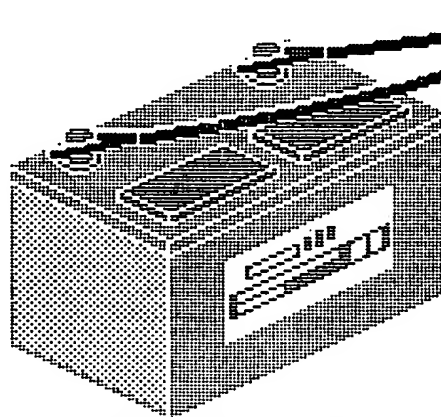
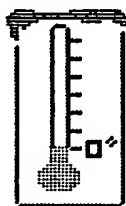
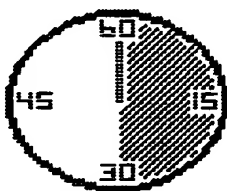
Batteries
for every
purpose

Cold Cranking Power
Engineering vs. Marketing Ratings
Reserve Capacity

Screen 2 of 2

FIG. 65

782



*** COLD CRANKING CAPACITY**

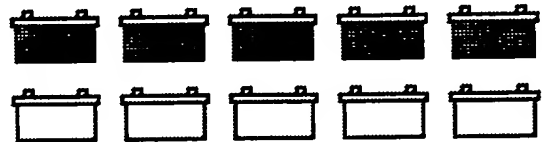
- + Amount of current battery can deliver for 30 seconds at 0 degrees without dropping below a specific voltage
- + Ability of battery to provide adequate power to start a cold engine based on manufacturer's standards

ENGINEERING RATINGS



ENGINEERING RATINGS ACHIEVE
SAE PERFORMANCE STANDARDS
95%
OF THE TIME

MARKETING RATINGS



MARKETING RATINGS ACHIEVE SAE
PERFORMANCE STANDARDS ONLY
50%
OF THE TIME

* ENGINEERING vs MARKETING RATINGS

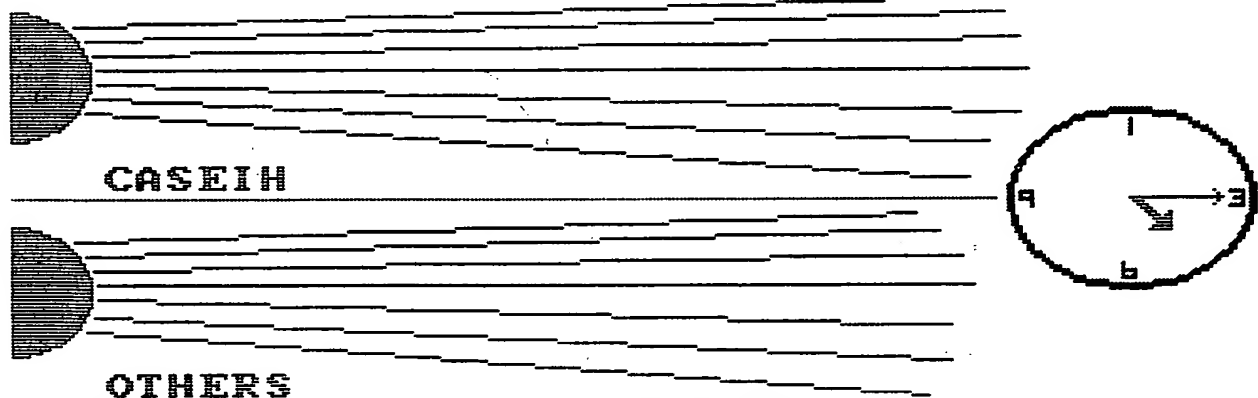
- + CASEIH will accept only engineering ratings
- + CASEIH randomly selects units for tests to insure our high standards are being met
- + Reliable quality is guaranteed

FIG. 66

784

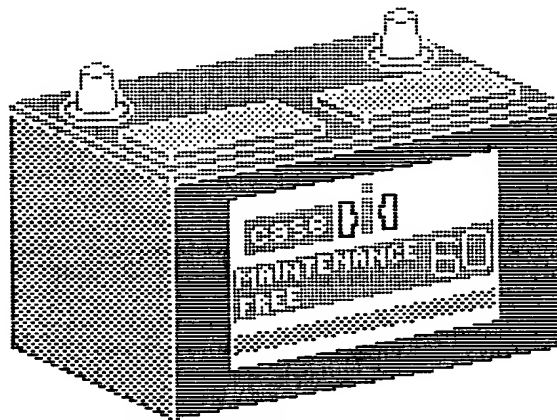
FIG. 67

786



* HIGH RESERVE CAPACITY

- + CASEIH batteries have the capacity to deliver a sustained electrical flow if a vehicle's charging system fails
- + Reliable performance in the field



Batteries
for every
purpose

Overview
Bone Dry Charging
vs Dry Charging
Extended Life
vs Wet Charging
Hybrid Construction

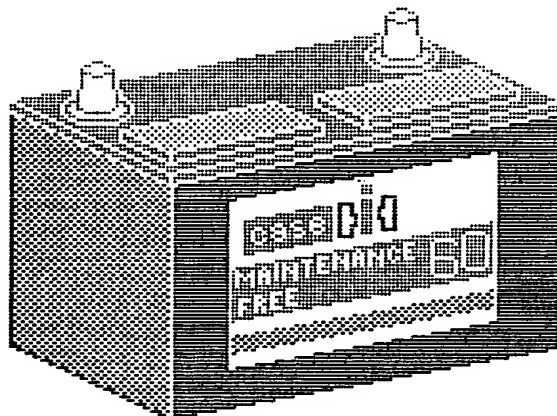
Screen 1 of 3

FIG. 68

788

FIG. 69

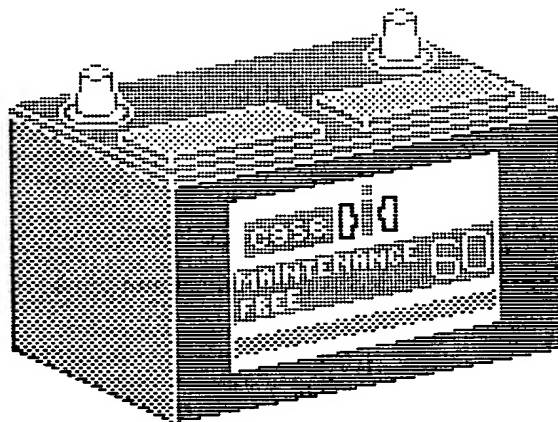
790



Batteries
for every
purpose

Intermittent Application
Cyclic Capacity
Capacity Retention
Grid Growth
Computerized Grids
Envelope Separators

Screen 2 of 3



CASE IH

**Batteries
for every
purpose**

**Epoxy Anchoring
Grid Vibration
Sediment Build-up
Intercell Connectors
Venting System
Terminal Designs**

Screen 3 of 3

FIG. 70

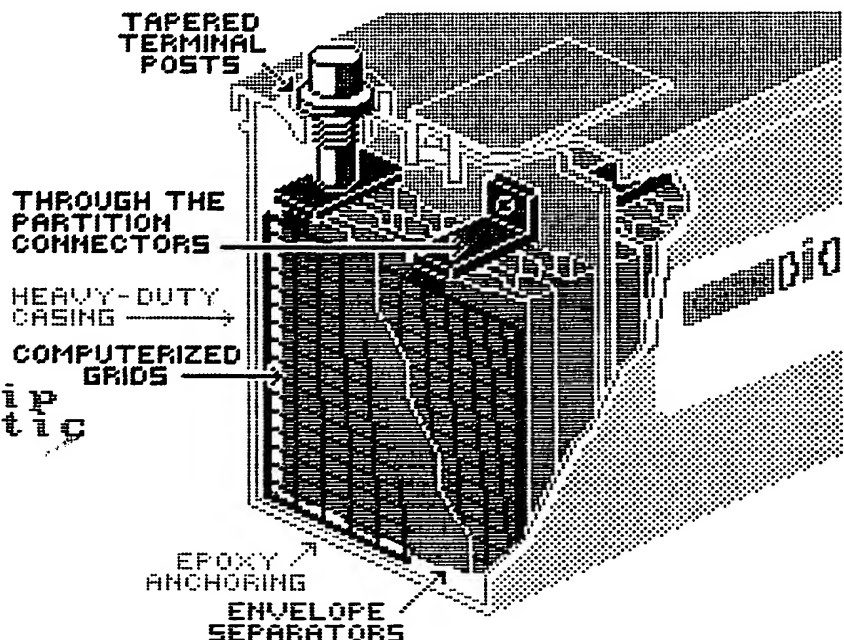
816

FIG. 71

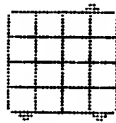
792

**CASE IH
BATTERIES**

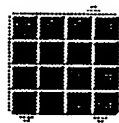
- + Made in North America with a unique blend of skilled craftsmanship and futuristic automation



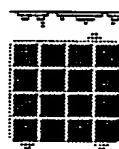
CASEIH



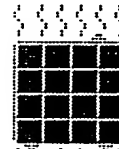
GRID



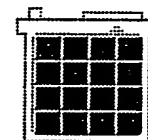
LEAD
APPLIED



ACID
CHARGED



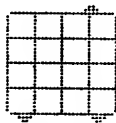
OVEN
DRY



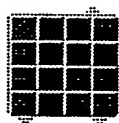
ASSEMBLED

**BONE
DRY
BATTERY**

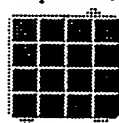
OTHERS



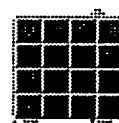
GRID



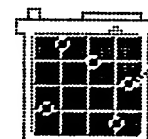
LEAD
APPLIED



ACID
CHARGED



DRIP/
SPIN DRY



ASSEMBLED

MOISTURE
REMAINS
**DRY
BATTERY**

*** BONE DRY CHARGING**

- + CASEIH steam and oven dries the grid plates for their batteries so not one drop of electrolyte is present during shipping and storage
- + All batteries stay factory fresh until electrolyte is added at time of sale

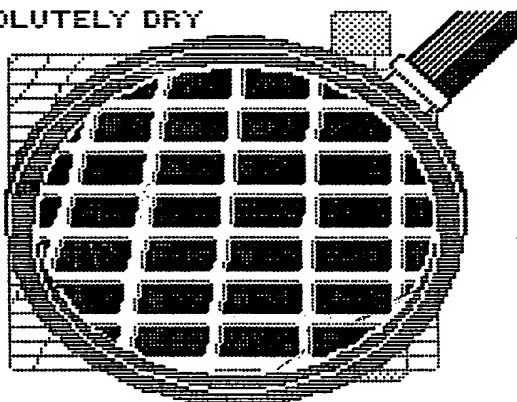
FIG. 72

794

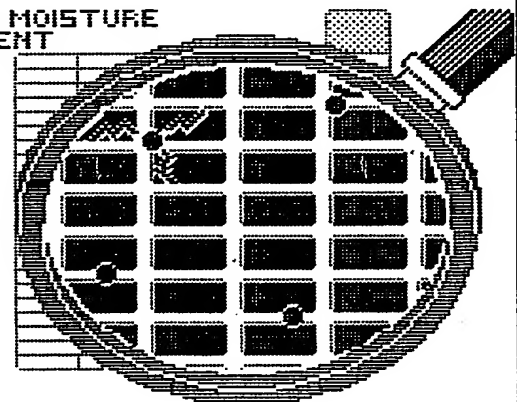
FIG. 73

796

ABSOLUTELY DRY



**SOME MOISTURE
PRESENT**



*** CASEIH BONE DRY**

- + Batteries remain factory fresh until electrolyte is added for long, useful life

*** DRY CHARGED**

- Batteries wear down continuously even on the shelf

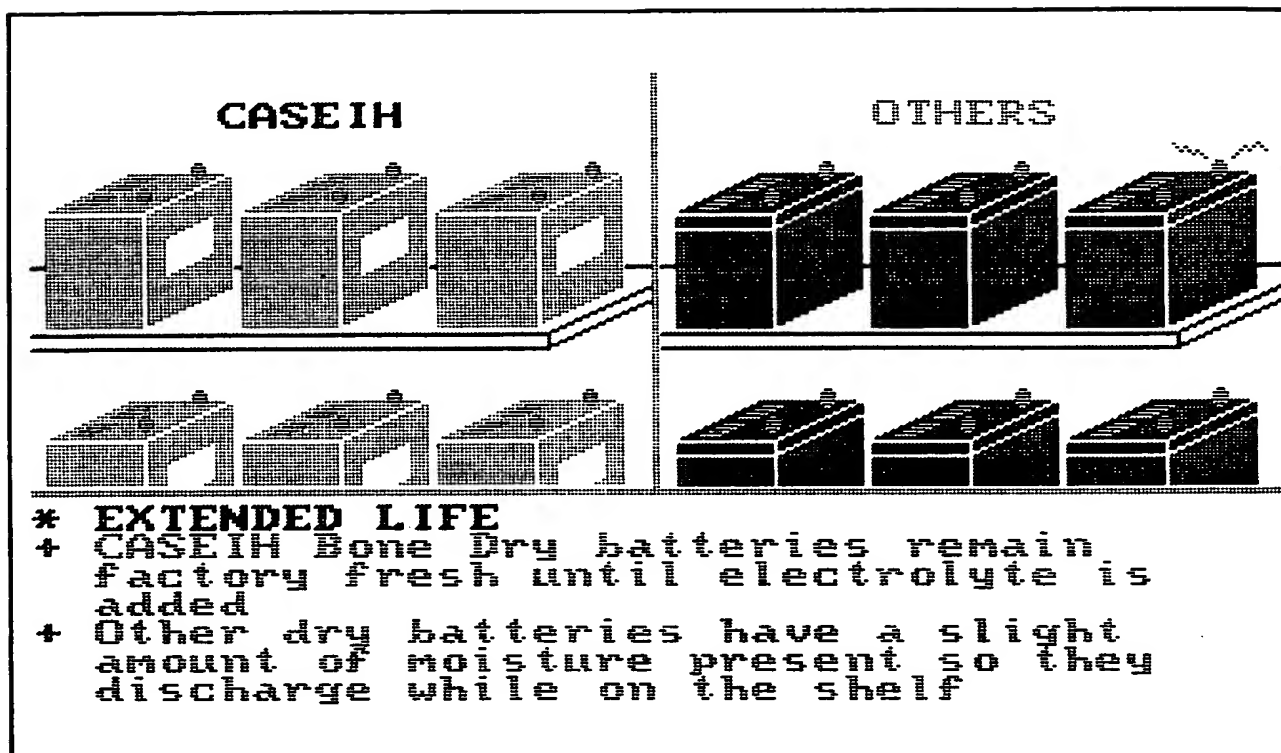


FIG. 74

798

FIG. 75

800

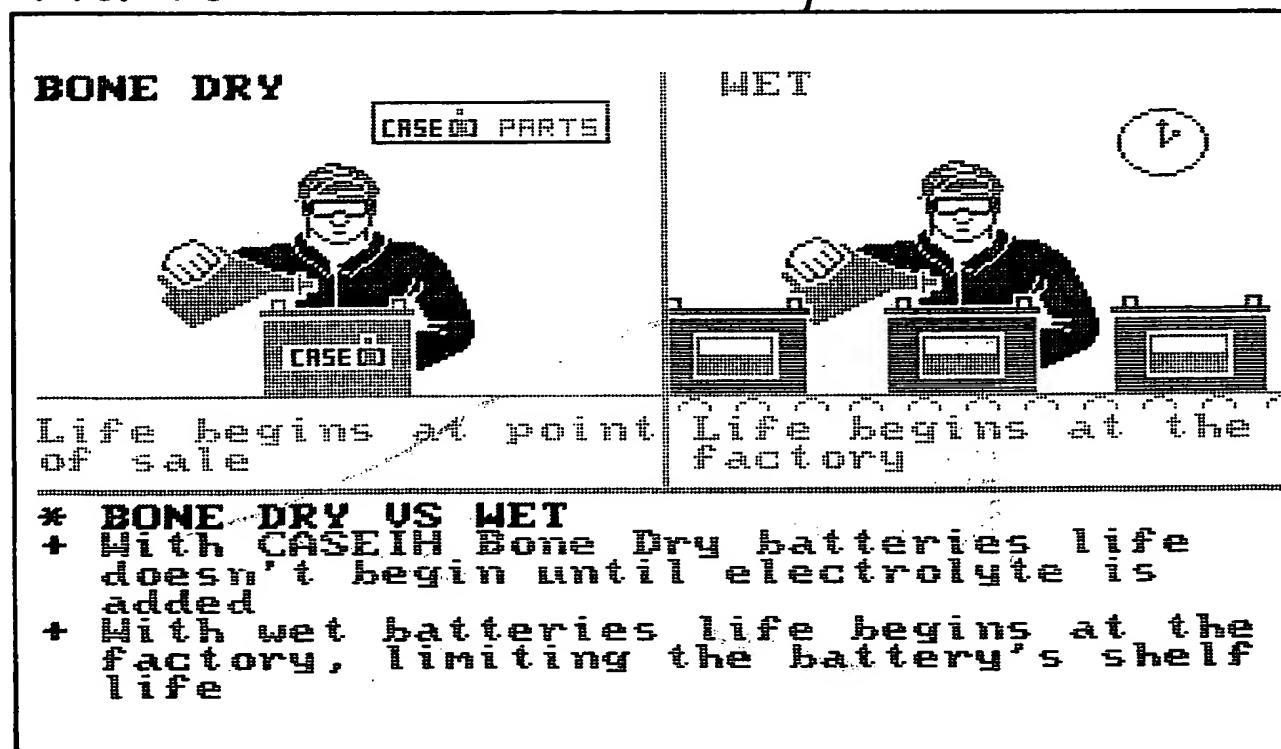


FIG. 76

802

HYBRID BATTERY

- + The term "hybrid battery" means the positive grid alloy is a low antimony-lead alloy and the negative grid alloy is a calcium-lead alloy

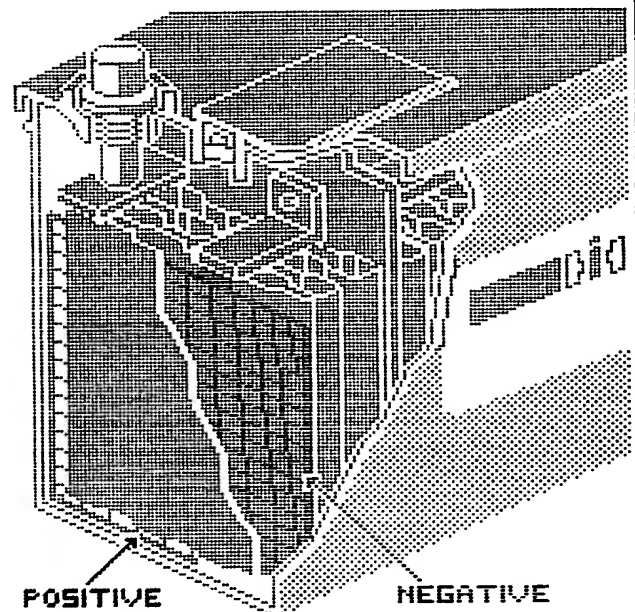
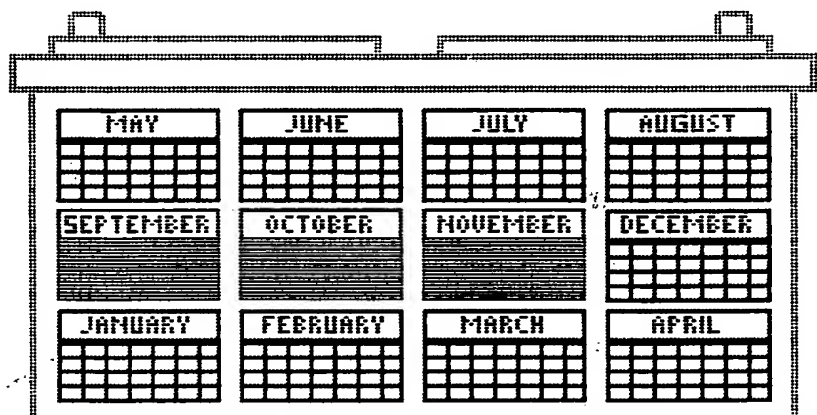


FIG. 77

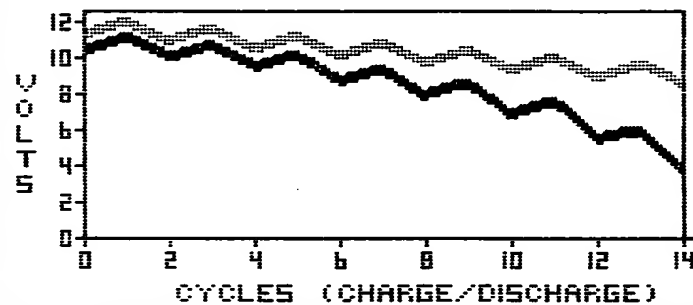
814

■ PERIOD OF
ACTIVE
APPLICATION

*** INTERMITTENT APPLICATION**

- + CASEIH hybrid battery is more suitable in starting a vehicle after standing for long periods of inactivity
- + Once the vehicle is started, the hybrid battery will accept charge quickly

— CASEIN
HYBRID
— CALCIUM



* CYCLIC CAPACITY

- + SAE cycle-life test data has shown that hybrid batteries out-perform calcium batteries during moderate depth cycling tests by two to one

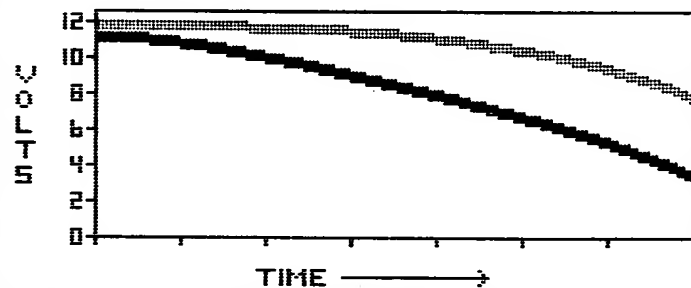
FIG. 78

812

FIG. 79

810

— CASEIN
HYBRID
— CALCIUM



* CAPACITY RETENTION

- + Capacity retention of calcium batteries fades much faster than that of hybrid batteries
- + Active material utilization in hybrid batteries is superior and recovery after a deep discharge more complete

FIG. 80

808

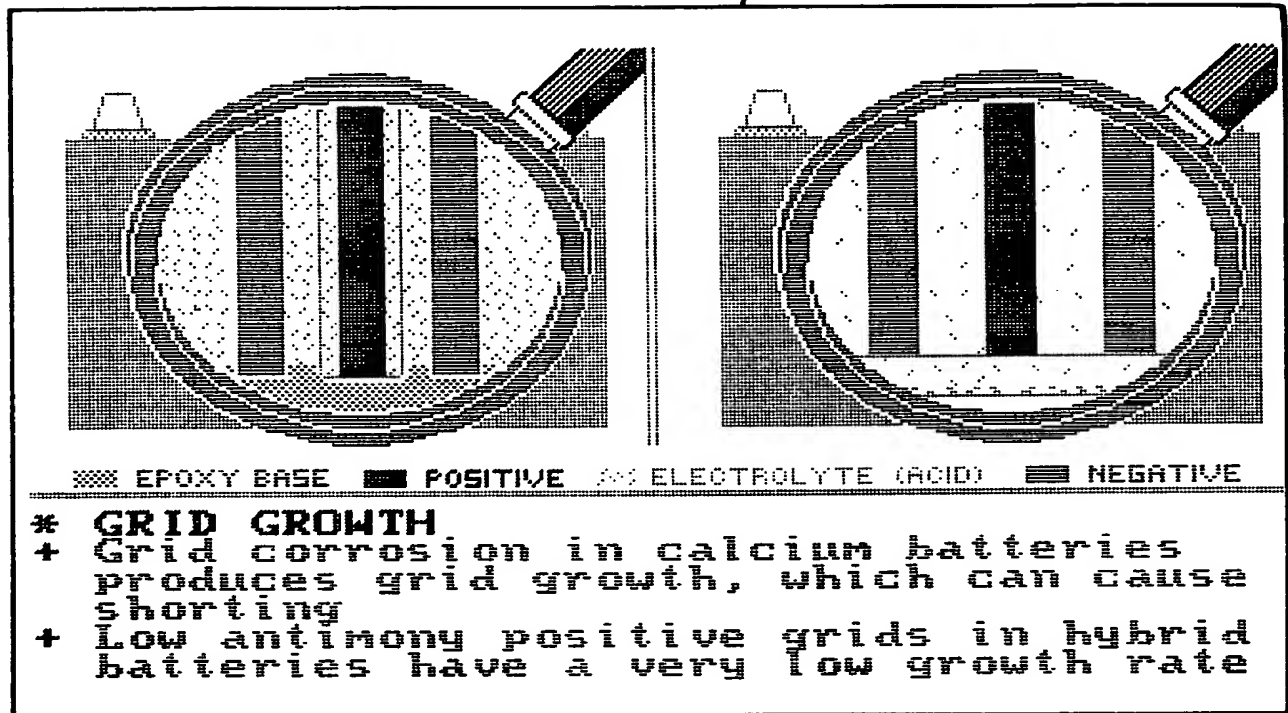


FIG. 81

808

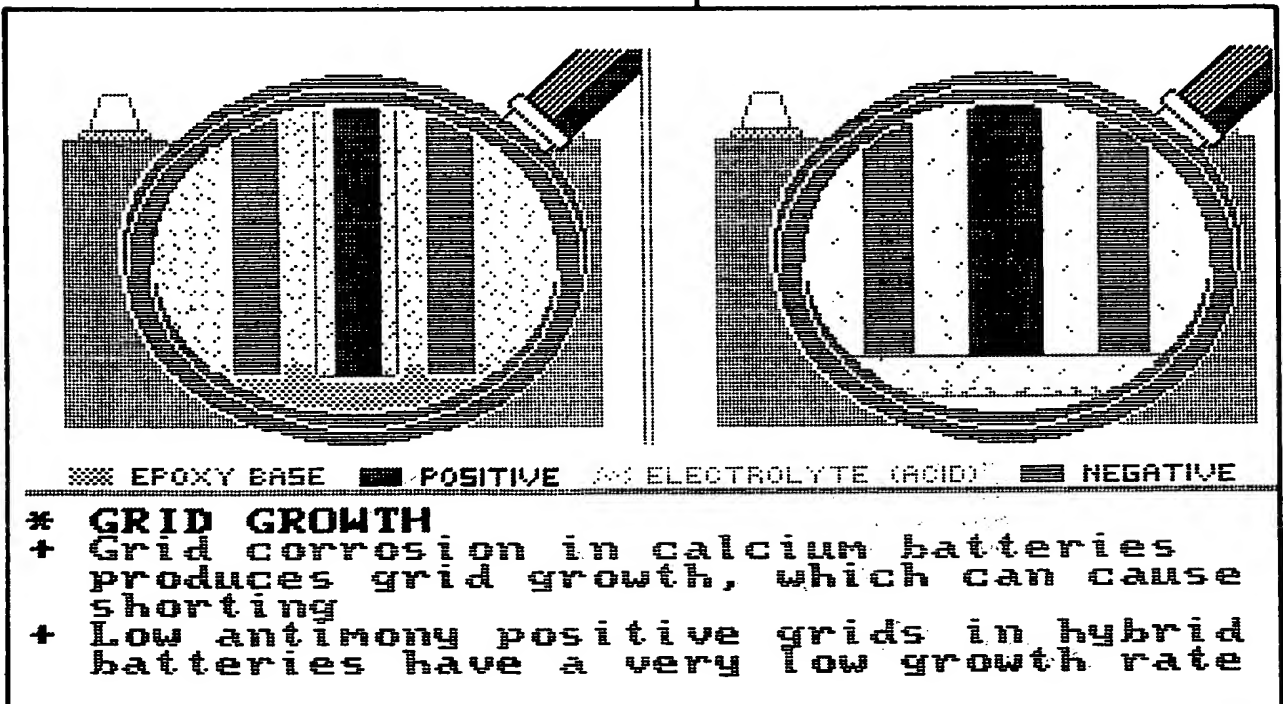


FIG. 82

808

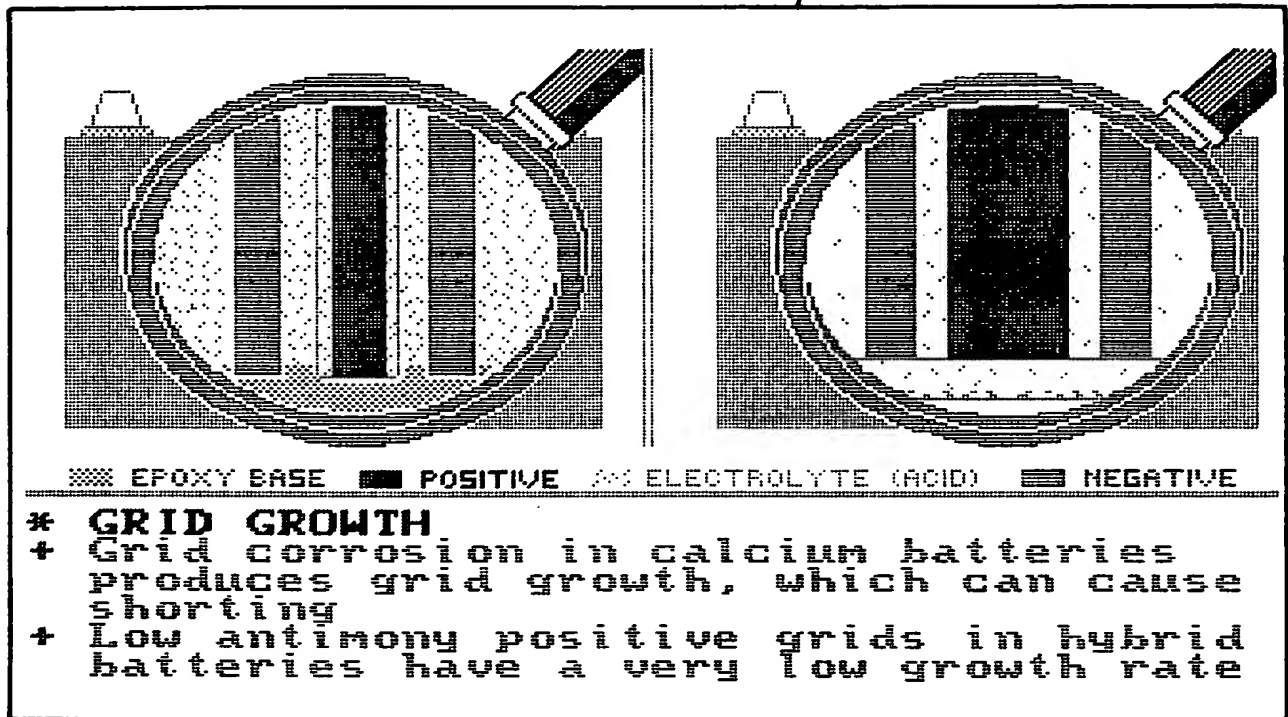


FIG. 83

808

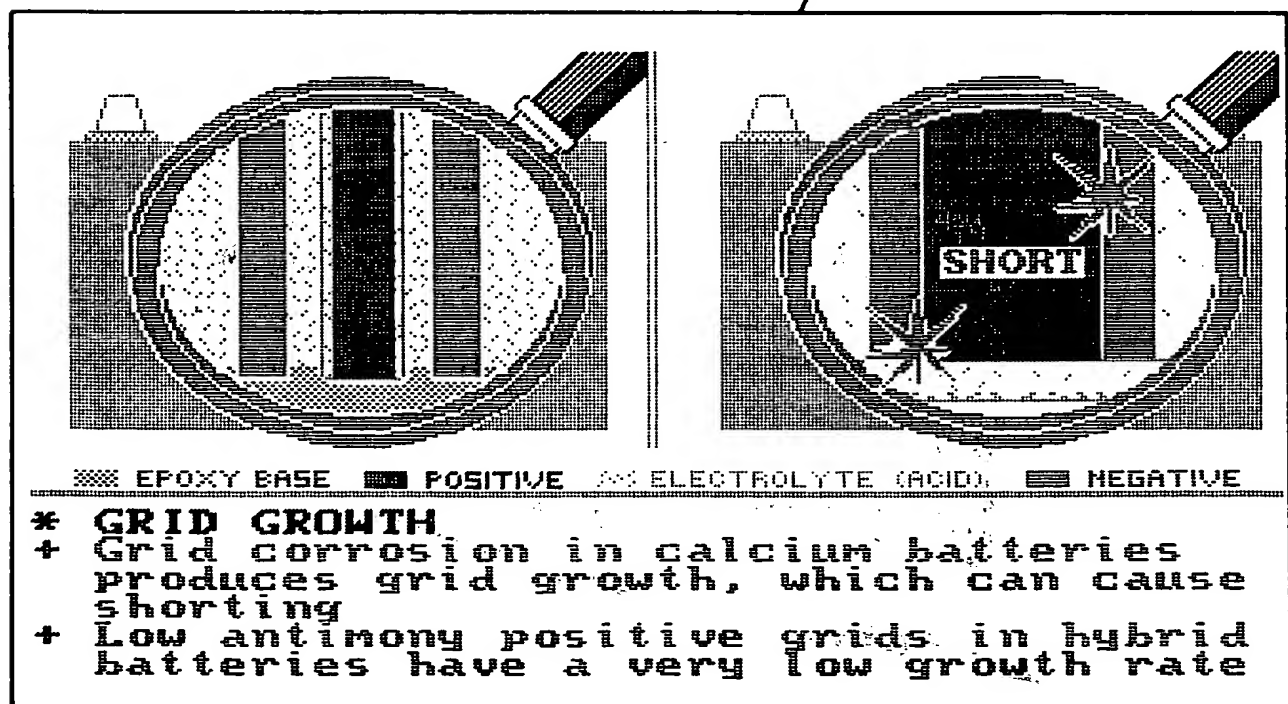
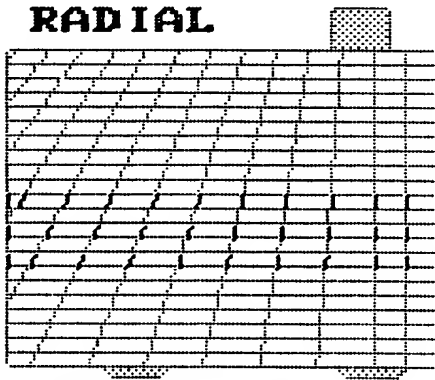


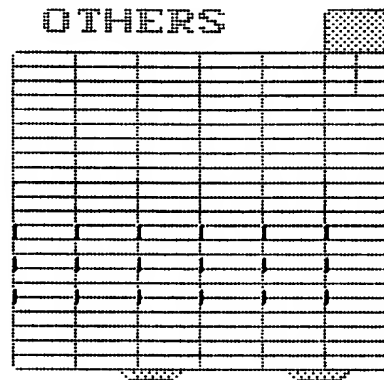
FIG. 84

806

RADIAL



OTHERS

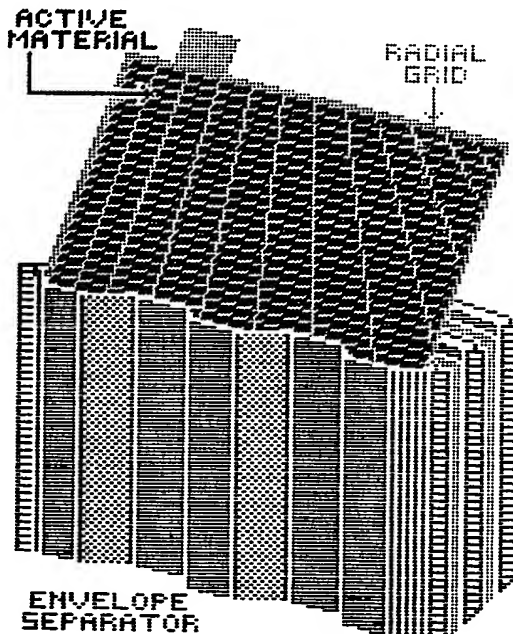


*** COMPUTERIZED RADIAL GRIDS**

- + Allow the shortest, most direct electrical flow to the terminals for faster starts
- + Developed by computer to guarantee the most efficient design possible

FIG. 85

804



ENVELOPE SEPARATORS

- + Fully enclose grid plates to prevent direct grid-to-grid contact which results in a short circuit
- + Contain the shedding of active material from the grids due to vibration by keeping shed material in contact with grid

FIG. 90

826

"FLAME ARRESTER" VENT PLUG

Allows gas to
escape but
prevents
external flames
or sparks from
entering the
battery

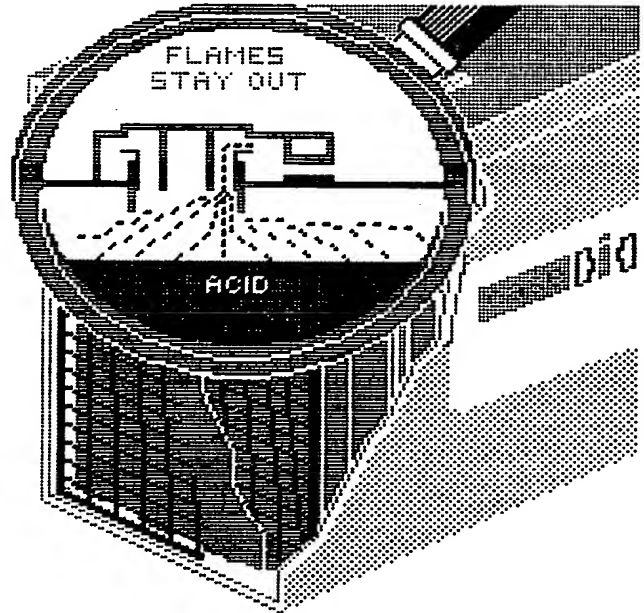
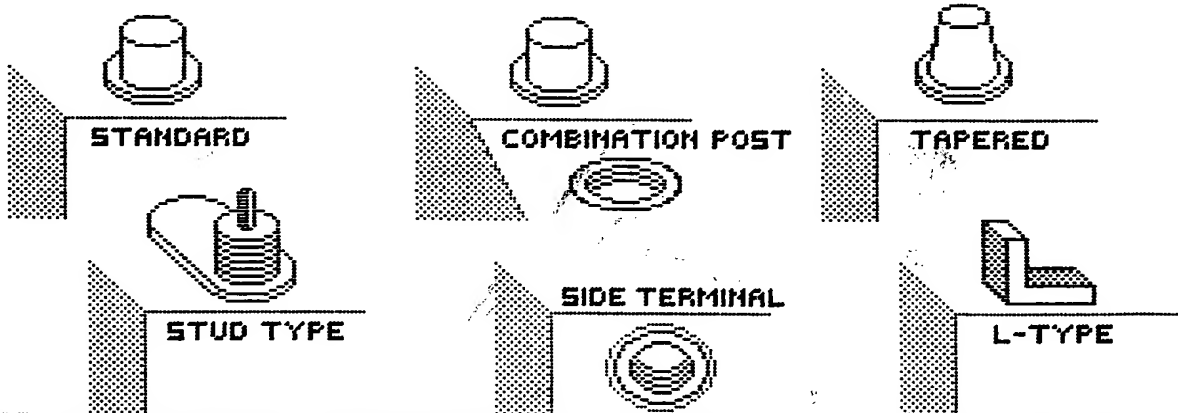


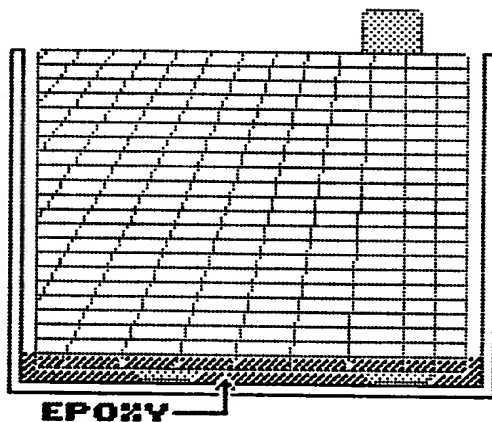
FIG. 91

828



*** TERMINAL DESIGNS**

+ CASEIH batteries offer a wide variety of terminal designs to meet your every need



SUPERIOR ANCHORING

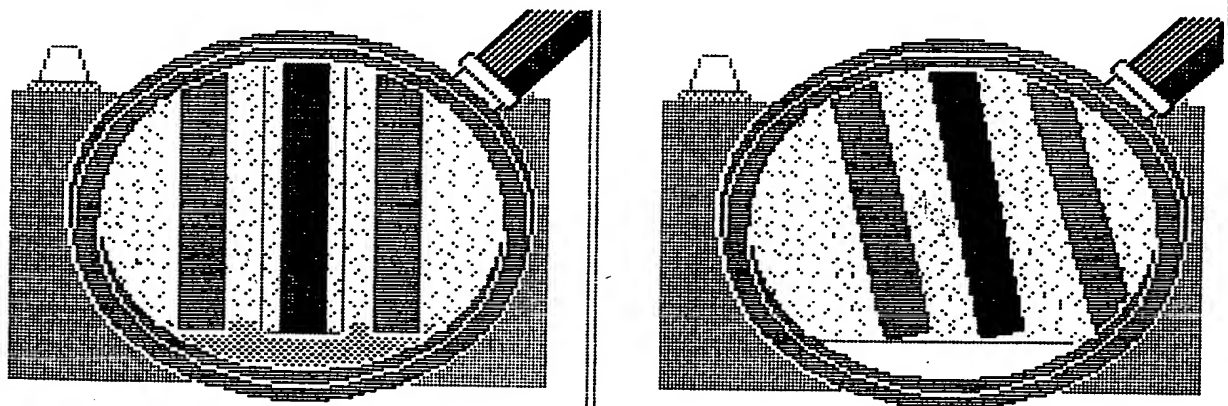
- + CASEIH only uses epoxy in the manufacturing process of its batteries
- + Epoxy is vastly superior to hot melt glue in its adhesion to dirty surfaces
- + Reduces grid plate vibration which is the major failure problem of heavy duty batteries

FIG. 86

818

FIG. 87

820



EPOXY BASE
 POSITIVE
 ELECTROLYTE (ACID)
 NEGATIVE

* GRID VIBRATION

- + Epoxy anchoring of grids helps to eliminate vibration damage by securely holding grids in place
- + Helps prevent shedding of active material and lengthens battery life

FIG. 88

822

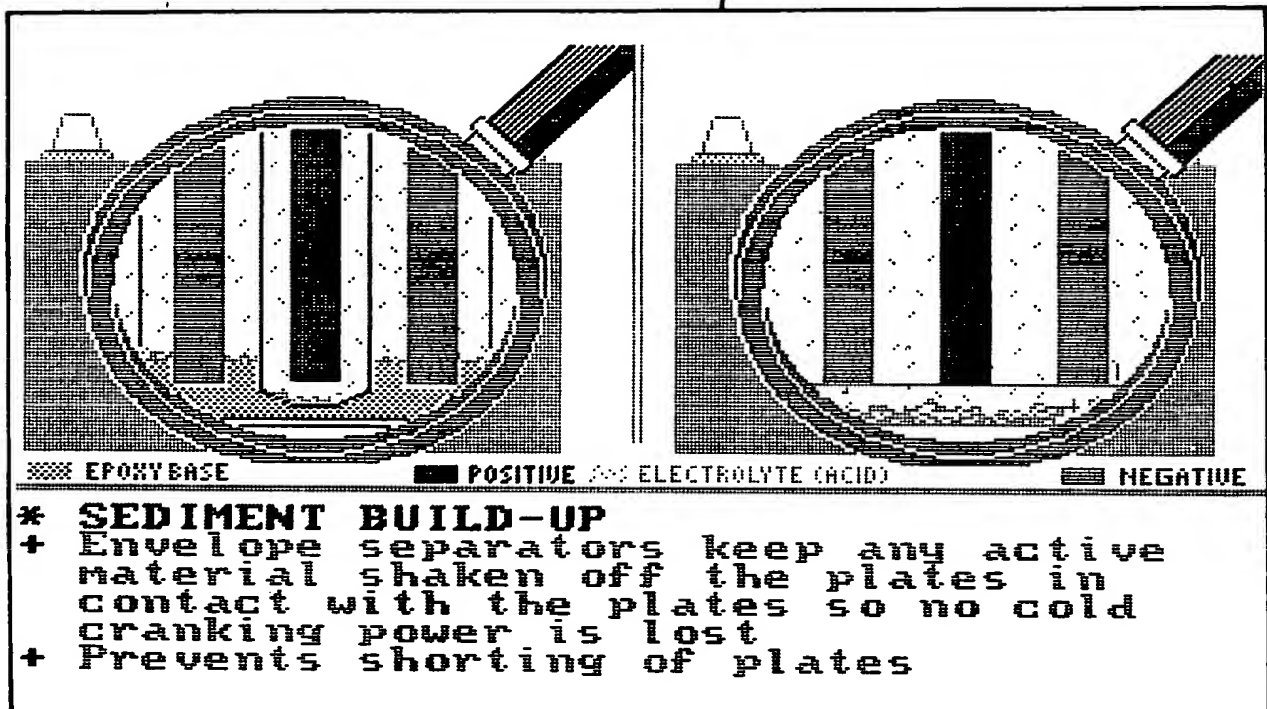


FIG. 89

824

